

**FIFTH FIVE-YEAR REVIEW REPORT FOR
PICKETTVILLE ROAD LANDFILL SUPERFUND SITE
DUVAL COUNTY, FLORIDA**



MAY 2021

Prepared by

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LIST OF ABBREVIATIONS AND ACRONYMS

1,1-DCE	1,1-Dichloroethene
ACL	Alternate Concentration Limit
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DMW	Deep Monitoring Well
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FDEP	Florida Department of Environmental Protection
FDER	Florida Department of Environmental Regulation
FS	Feasibility Study
FYR	Five-Year Review
GCL	Geosynthetic Clay Liner
GP	Gas Probe
HCW	Hawthorne Contact Well
HQ	Hazard Quotient
IC	Institutional Control
LEL	Lower Explosive Limit
MCL	Maximum Contaminant Level
µg/L	Micrograms per liter
MNA	Monitored Natural Attenuation
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PCB	Polychlorinated Biphenyl
PCOR	Preliminary Close-Out Report
PRLS	Pickettville Road Landfill Site
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SMW	Shallow Monitoring Well
UU/UE	Unlimited Use/Unrestricted Exposure
VISL	Vapor Intrusion Screening Level
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fifth FYR for the Pickettville Road Landfill Superfund Site. The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE). The site consists of one operable unit (OU). OU-1 addresses landfill waste and groundwater remedies.

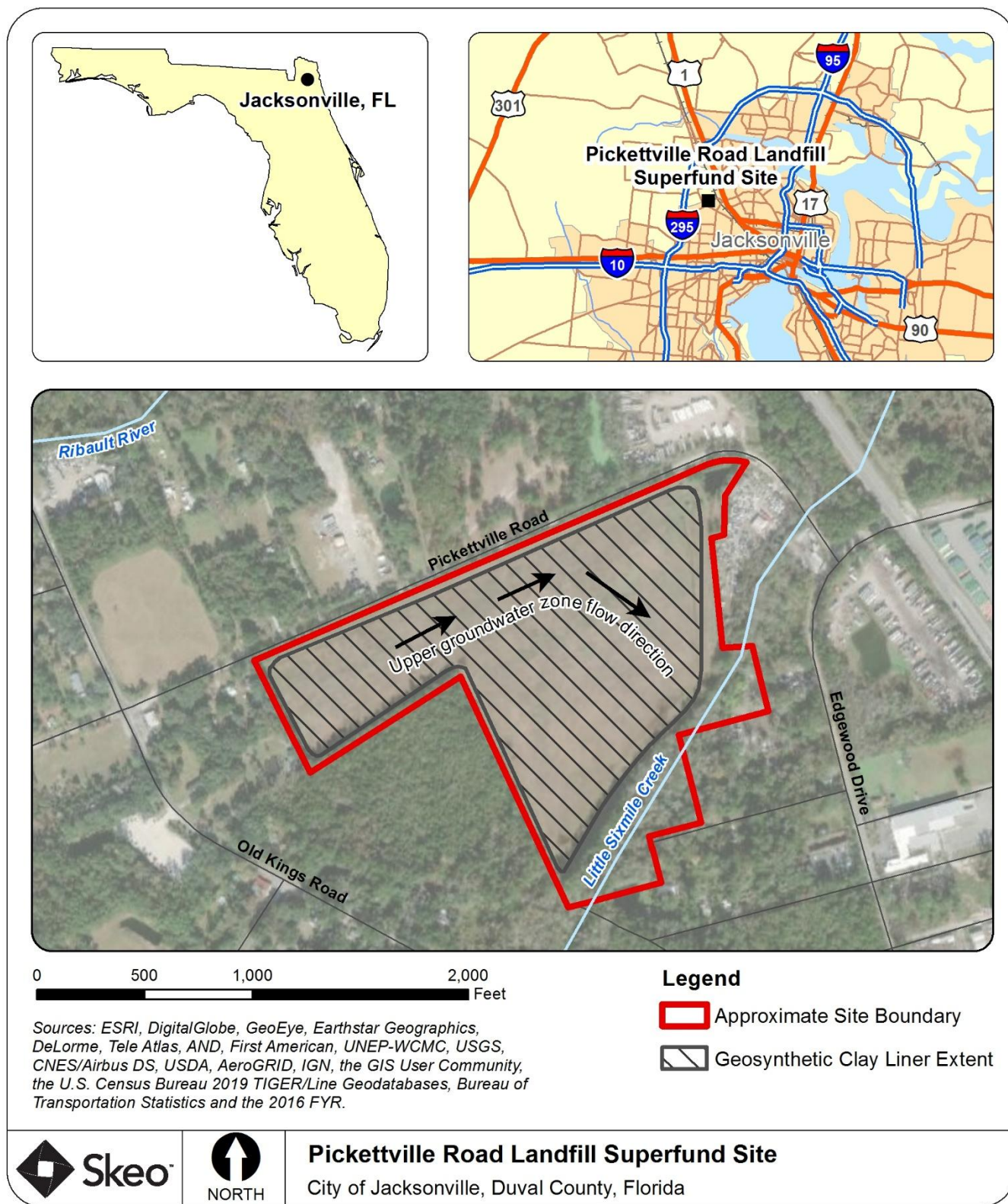
The EPA's remedial project manager (RPM) Scott Martin led the FYR. Participants included potentially responsible party (PRP) contractor representative Kristi Hess, Florida Department of Environmental Protection (FDEP) project manager Miranda McClure, and Kirby Webster and Claire Marcussen from Skeo (EPA FYR support contractor). The review began on 5/21/2020. Appendix A provides a list of the documents used to prepare this FYR Report. Appendix B includes site status information. Appendix C provides a brief site chronology.

Site Background

The 52-acre site is located at 5150 Pickettville Road, five miles northwest of downtown Jacksonville, in Duval County, Florida (Figure 1). The site is in an area with mixed industrial and residential uses and includes some forested areas. The city of Jacksonville operated a borrow pit for sand with limited disposal activities on site from the 1940s to 1967. In 1968, Jacksonville began leasing the property for full-scale landfill operations. Until 1977, municipal waste and industrial wastes such as oil, lead acid battery liquid waste, battery casings, light turpentine sludge, and polychlorinated biphenyls (PCBs) were disposed of at the site. In 1977, Jacksonville closed, backfilled and regraded the landfill. Landfill operations resulted in the contamination of groundwater with organic and metal contaminants from landfill waste.

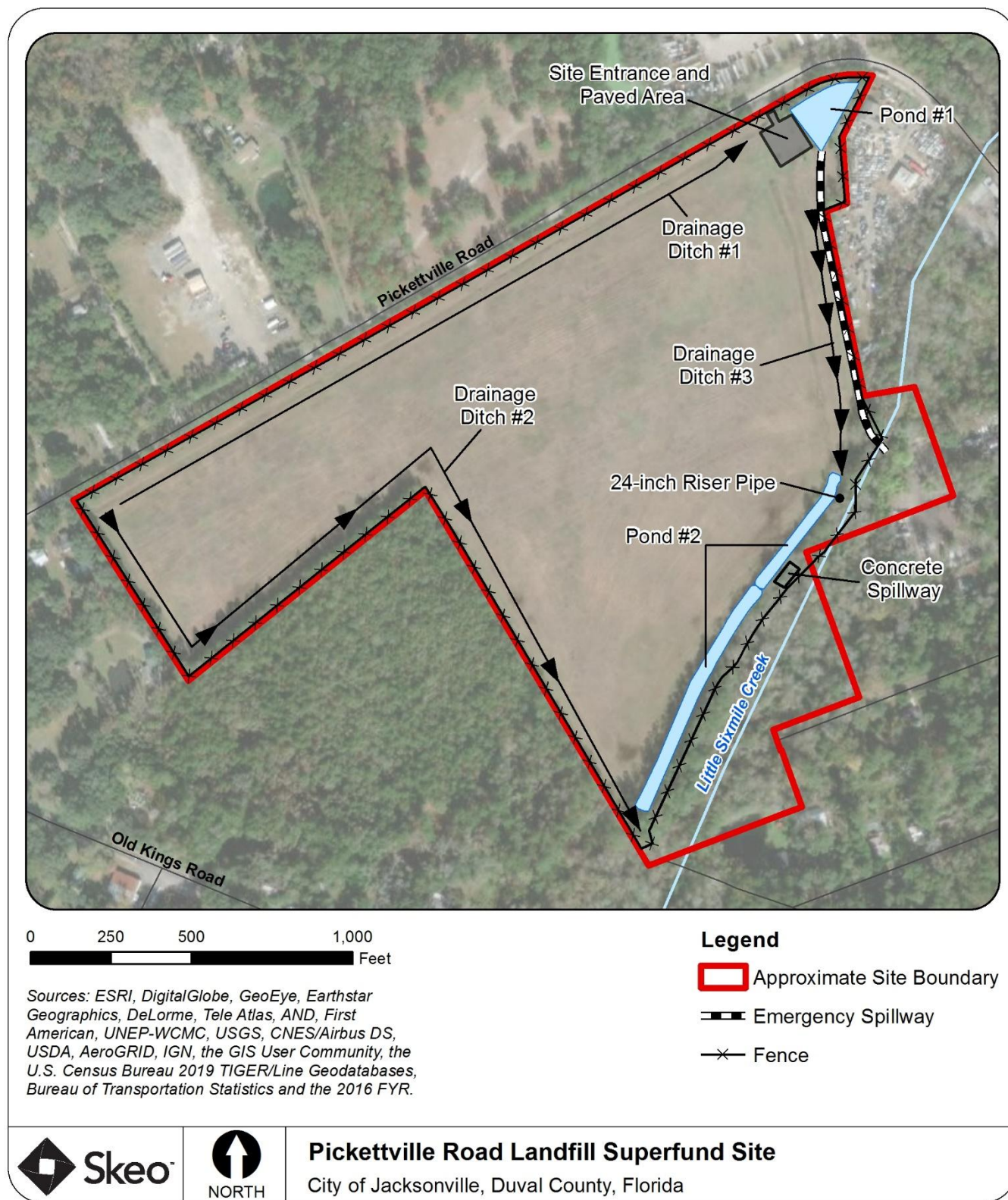
Little Sixmile Creek flows through the southeastern portion of the site. The site is currently unoccupied, vegetated and fenced. Stormwater runoff at the site generally flows to the east-southeast and discharges into Little Sixmile Creek through stormwater ditches, on-site ponds and a concrete spillway (Figure 2). Groundwater occurs in the upper zone consisting of the Upper Sand and Rock aquifers and the deeper Floridan Aquifer, which is separated from the upper zone by the Hawthorne confining unit. Groundwater contamination is limited to the upper zone. Groundwater flow in the upper zone is in a northeasterly direction and discharges to Little Sixmile Creek. The Rock Aquifer is the major water-producing zone at the site and is underlain by the Hawthorne Group. The Hawthorne Group is the regional confining unit for the Floridan Aquifer. The Floridan Aquifer is the principal source of fresh water in northeastern Florida and is under artesian conditions.

Figure 1: Site Vicinity



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the site.

Figure 2: Site Detail



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FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Pickettville Road Landfill		
EPA ID: FLD980556351		
Region: 4	State: FL	City/County: Jacksonville/Duval
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the Site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name: Scott Martin		
Author affiliation: EPA with support provided by Skeo		
Review period: 5/21/2020 - 2/1/2021		
Date of Site inspection: 10/20/2020		
Type of review: Statutory		
Review number: 5		
Triggering action date: 2/24/2016		
Due date (<i>five years after triggering action date</i>): 2/24/2021		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action/Response Action

In November 1979, the Florida Department of Environmental Regulation (FDER, now FDEP) found elevated levels of metals in on-site wells. In 1981, following a preliminary assessment and site investigation, the EPA confirmed the presence of contamination in groundwater, surface water, soil and leachate. The EPA notified site's property owners H.H. Claussen and Jacksonville of their roles as PRPs at the site in March 1982. By July 1982, the EPA and FDER identified on-site erosion and leachate problems. The PRPs addressed these problems in November 1982, installing a retaining wall to correct them.

A subsequent EPA inspection noted the persistence of the leachate problem at the site. In December 1982, the EPA proposed the site for listing on the Superfund program's National Priorities List (NPL). The EPA finalized the site's listing on the NPL in September 1983. By 1986, the EPA had identified all PRPs. They formed the Pickettville Road Landfill Superfund Site Group (the PRLS Group) to address site issues.

Based on the results of the site's 1987 remedial investigation (RI) and 1989 risk assessment, the PRLS Group concluded that waste disposal activities at the site contaminated groundwater and that hypothetical consumption of Upper Sand Aquifer groundwater would pose unacceptable risks due to the presence of volatile organic compounds (VOCs) and arsenic, an inorganic compound. The PRLS Group also concluded that exposure to soil did not pose unacceptable risks to human health and the environment. The EPA and FDER considered the RI and risk assessment inadequate. A site-specific risk assessment and feasibility study (FS) by the EPA in 1990 determined that dermal contact with landfill surface soil and ingestion of groundwater could result in future unacceptable human health risks. The FS Report concluded that it was necessary to limit access and uncontrolled dumping, to address statutory requirements associated with management of an inactive municipal landfill, and to assist in leachate and groundwater management to prevent exposure. The ecological risk assessment demonstrated that landfill waste has migrated into Little Sixmile Creek. The site contaminants of concern (COCs) include benzene and vinyl chloride in groundwater. Arsenic was not included as a COC as the concentrations were below the drinking water standard at that time.

The EPA issued the site's Record of Decision (ROD) in September 1990. It specified the cleanup plan for contaminated site waste, groundwater, and surface water and sediment in Little Sixmile Creek. The EPA updated the remedy with an Explanation of Significant Differences (ESD) in 1996. The ESD changed the landfill cover from a clay liner to a geosynthetic clay liner (GCL). Table 1 lists the remedial action objectives (RAOs) and remedy components as specified in the ROD and ESD.

Table 1: RAOs and Remedy Components

Contaminated Area	RAO	Remedy Components
Groundwater	<ul style="list-style-type: none"> Minimize the potential for ingestion of groundwater associated with the landfill in the surficial aquifer. 	<ul style="list-style-type: none"> Implement a long-term groundwater monitoring program. Extend the city water main to residences immediately north of the site to supply alternative sources of potable water as this is the primary area that could potentially be impacted if groundwater contamination migrated off site due to groundwater flow at the site. Install three deep Floridan Aquifer monitoring wells to determine the vertical extent of groundwater contamination. Implement a well abandonment program for Upper Sand Aquifer wells immediately north of the site. Implement institutional controls to limit groundwater use in the area immediately north of the site.
Landfill Soil/Waste	<ul style="list-style-type: none"> Control surface water runoff. Control potential fugitive vapor emissions. Minimize the potential for direct contact with the landfill material. 	<ul style="list-style-type: none"> Construct a GCL cover with a passive gas collection system.^a Install a perimeter security fence. Implement institutional controls to regulate future development of the site.
Little Sixmile Creek	<ul style="list-style-type: none"> Restoration of Little Sixmile Creek next to the site. 	<ul style="list-style-type: none"> Remove landfill waste that has migrated from the site into the creek. Complete an ecological study of the creek to determine if additional remediation is warranted.
<i>Notes:</i> a. The 1996 ESD substituted a GCL for the clay barrier layer identified in the 1990 ROD.		

The ROD established alternate concentration limits (ACLs) as the cleanup goals for two groundwater COCs in compliance wells at the landfill edge. ACLs were established so that migration of contaminants from the landfill, as represented by benzene and vinyl chloride, are at or below the ACLs protective of surface water quality in Little Sixmile Creek (Table 2). The ACLs are contingent on institutional controls limiting groundwater use that could result in human exposure to contaminants.

Table 2: Cleanup Goals for Groundwater COCs

COC	ROD Cleanup Goal ^a (µg/L)
Benzene	115
Vinyl chloride	115
<i>Notes:</i> a. ACL is established for COCs in on-site groundwater at the edge of the landfill. It is based on a groundwater-to-surface water dilution factor. µg/L = micrograms per liter Source: 1990 ROD, Section 9.1, Cleanup Goals.	

The ROD also required the installation of three deep Floridan Aquifer monitoring wells to determine the vertical extent of groundwater contamination. The ROD indicates that if the new Floridan Aquifer wells show site contamination above the Safe Drinking Water Act's maximum contaminant levels (MCLs) for drinking water, then a feasibility analysis of groundwater remedial alternatives is required, and the ROD amended, if deemed necessary. According to the site's June 1993 Revised Groundwater Monitoring Plan, the PRLS Group determined that groundwater monitoring of the Floridan Aquifer is not necessary due to the extensive thickness of the low-permeability Hawthorne Group, which serves as a confining unit, as well as the significant upward gradient from the Floridan Aquifer system. Thus, the three Floridan Aquifer wells were not installed as per the ROD.

Status of Implementation

The PRLS Group completed the remedial design for the first phase of the remedial action between February and April 1992. The PRLS Group was responsible for the remedial action pursuant to a Consent Decree with the EPA filed in April 1992. Between March 1992 and July 1993, the PRLS Group executed the following remedial actions:

- Extended the city water main to 10 properties north of the site and between the site and Little Sixmile Creek.
- Constructed a 6-foot-high barbed wire fence around the site.
- Installed a perimeter security fence to restrict unauthorized access to the site.
- Completed a well survey for wells in the area around the site that qualified for the well abandonment program.
- Received permission from seven property owners to install water line hookups and perform well abandonment activities at the identified properties.¹
- Filed a notice and deed restrictions with Duval County Public Records for the landfill property to restrict the use of groundwater and land.

The PRLS Group completed the remedial design for the second phase of remedial action between April 1992 and September 1993. The PRLS Group completed the following remedial actions between October 1993 and 1997:

- Constructed the gas control system.
- Constructed the stormwater control system, including the perimeter ditches, two retention ponds and emergency spillways at each pond to handle excess runoff and discharge to Little Sixmile Creek.
- Restored Little Sixmile Creek by removing waste and debris (e.g., concrete, cables) along the creek bank and placing the material in the landfill, regrading the creek bank slope, integrating the modified section of the creek bank with upstream and downstream bank contours, and providing erosion control for the creek bank.
- Completed an ecological study on Little Sixmile Creek. The study did not identify any negative ecological impacts on the creek due to the site.
- Constructed the GCL and vegetative landfill cover after placement of fill material in the landfill to bring it to grade, followed by the settlement period.
- Completed off-site and on-site well abandonment.²
- Installed six monitoring wells in the Upper Sand Aquifer and four monitoring wells in the Rock Aquifer.

Consistent with the ROD, the groundwater monitoring program was specified in the 1993 Remedial Design Report to periodically evaluate hydrogeologic conditions and groundwater quality in accordance with the ACL demonstration. The 1993 Remedial Design Report also required analysis of groundwater samples for other contaminants as well as the COCs benzene and vinyl chloride. The additional contaminants include specific VOCs and metals. In addition, the 1993 Remedial Design Report required

¹ One owner declined to have his well plugged. The well is located outside the area designated for institutional controls.

² According to the site's 1993 Final Remedial Design Report, groundwater monitoring of the Floridan Aquifer was not included because of the extensive thickness of the low-permeability Hawthorne Group (Upper Confining Unit) as well as the significant upward gradient from the Floridan Aquifer System.

analysis of wells along Little Sixmile Creek (SMW-4, 9, 10, 18 and 19, DMW-10 and 18) for pesticides and PCBs. The analysis was to be discontinued after three years if there were no detections.

Due to the presence of arsenic and 1,1-dichloroethene (1,1-DCE) above MCLs in shallow groundwater, the EPA requested that the PRPs prepare a focused FS in 2003. The PRPs recommended monitored natural attenuation (MNA) of arsenic and 1,1-DCE above MCLs in Site groundwater in the 2003 FS. In 2008, the PRPs completed a groundwater evaluation that demonstrated MNA would achieve RAOs specified in the 2003 focused FS. The PRPs also conducted groundwater/surface water interface sampling to evaluate consistently elevated arsenic detections in shallow monitoring wells 18 and 21 (SMW-18 and SMW-21). The EPA reviewed arsenic data and concluded in September 2008 that arsenic did not exceed its MCL in the groundwater/surface water interface in the creek. Based on these findings, the EPA signed the Site's Preliminary Close-Out Report (PCOR) in September 2008 to document the completion of all construction activities.

Institutional Control (IC) Review

As required by the ROD, the PRLS Group signed a Notice and Deed Restriction in July 1993 (Appendix J) that was filed with Duval County. The restrictions serve as an institutional control to restrict the following activities:

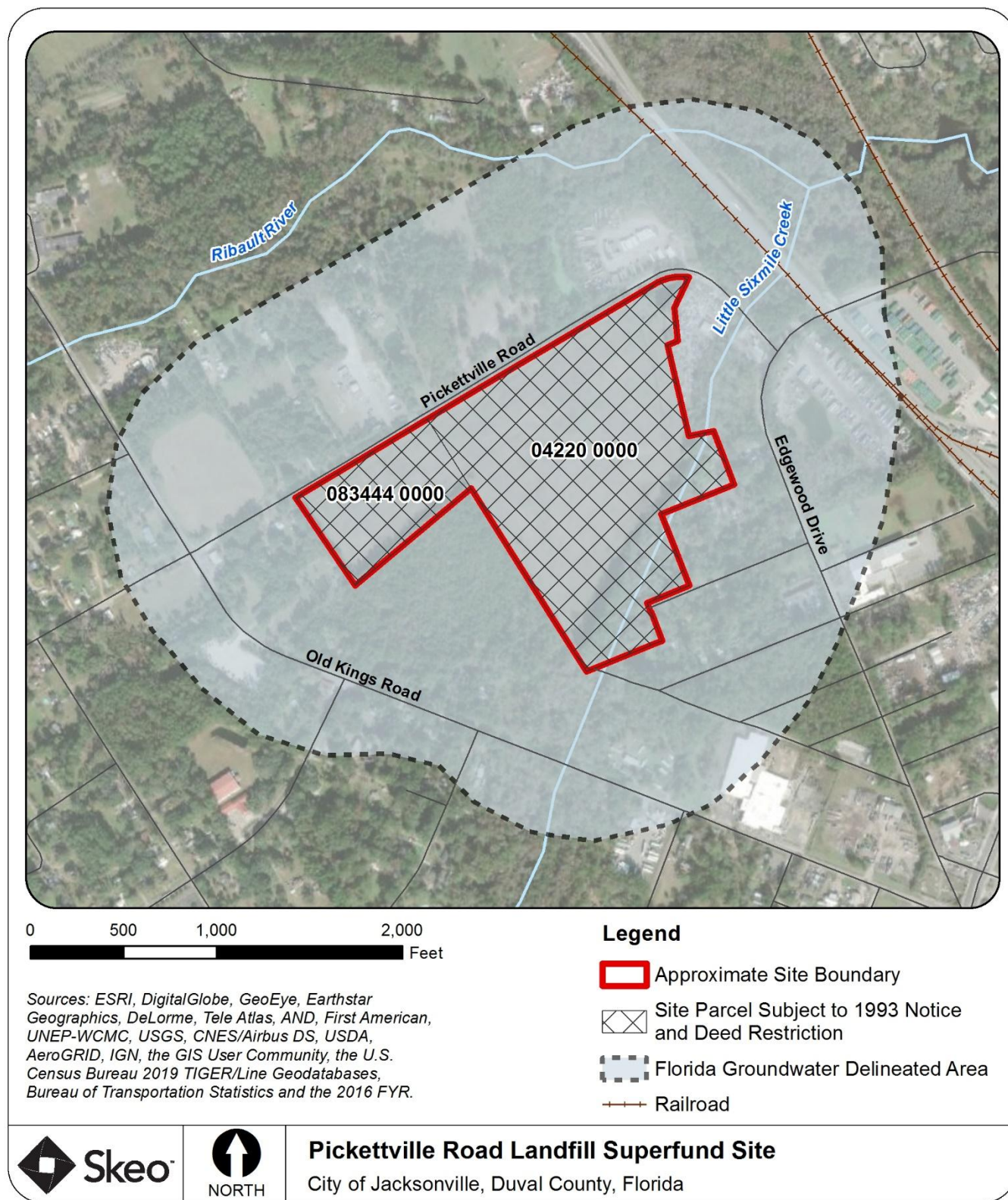
- Extraction or use of groundwater from the site.
- Any use of the site that would obstruct or disturb the remedy in place.
- Residential, commercial, industrial or recreational uses of the property.
- Limits construction of buildings or structures at the site to those related to the selected remedy.

The institutional controls in place may be too restrictive for future site uses as long as the remedy components are not compromised. The site is located in a Florida Groundwater Delineated Area, which restricts the placement of wells on the site and in areas around the site within the delineated area. Jacksonville owns the site, which consists of two parcels, 042200-0000 and 083444-0000. Table 3 lists the institutional controls associated with areas of interest at the site. Figure 3 shows the property boundaries for the parcels at the site with institutional controls.

Table 3: Summary of Planned and/or Implemented Institutional Controls (ICs)

Media That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	Yes	042200 0000 083444 0000	Restrict groundwater use in the surficial aquifer between the source and the discharge point.	The site lies in a Florida Groundwater Delineated Area. ^a Notice and Deed Restriction ^b Book 7624, Page 1496 July 29, 1993
Soil and Cap	Yes	Yes	042200 0000 083444 0000	Regulate future development of the Site. Prohibit disturbance of remedy.	Notice and Deed Restriction ^b Book 7624, Page 1496 July 29, 1993
<p><i>Notes:</i></p> <p>a. Florida's groundwater delineation information can be found online at: http://www.dep.state.fl.us/water/groundwater/delineate.htm.</p> <p>b. Record obtained online on June 22, 2020, using Book 7624, Page 1496 at: https://or.duvalclerk.com/search/SearchTypeBookPage.</p>					

Figure 3: Institutional Control Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the site and is not intended for any other purpose.

Systems Operations/Operation and Maintenance (O&M)

According to the site's 1993 Revised Groundwater Monitoring Plan, the general frequency of groundwater sampling during the O&M period is quarterly for the first year and semi-annually for up to 20 years (through 2017). Groundwater samples were collected from the Upper Sand and Rock aquifers from monitoring wells downgradient of the site. The parameter list for the groundwater monitoring program consists of indicator parameters and additional parameters. The indicator parameters include a specific list of organic compounds that serve as indicators of both volatile and non-volatile organic compounds and metals, which included the two COCs listed in the ROD. In addition, at the request of the EPA, the PRLS Group analyzes groundwater for other parameters to support trend analyses. They include ammonia, cyanide, major anions and cations, pH, specific conductance, and temperature.³ Routine O&M activities at the site include site inspections, closure cover maintenance, stormwater management system maintenance, gas control system maintenance, groundwater monitoring, gas monitoring and surface water discharge monitoring. The PRLS Group completed site inspections semi-annually and O&M reports are submitted to the EPA annually. According to the 2017 Monitoring Report, the 20-year O&M period as required in the Consent Decree has ended and the PRLS Group proposed and implemented modified O&M activities as follows.

- Sample monitoring wells SMW-18 and SMW-21 for arsenic every five years (to be completed one year ahead of the due date for the next FYR).
- Discontinue landfill gas monitoring.
- Mow the site two times per year.
- Conduct annual site inspections for use in preparing FYRs.

The PRLS Group submitted the sampling to support this FYR in March 2020. As part of this report the PRLS Group noted that the fence required repair in the northern corner of the site and a tree damaged the fenced in the southern corner of the site. The repairs have been made based on the site inspection completed in October 2020.

The 1990 ROD estimated O&M costs of \$171,000 per year over the 20-year O&M period. However, costs projected by the PRPs during remedial design illustrate an annual cost reduction over the O&M period. O&M costs incurred by the PRPs during the previous five years are summarized in Table 4.

Table 4: O&M Costs Over the FYR Period

Date Range	Total Cost (rounded to the nearest \$1,000)
August 2014 through July 2015	\$75,000
August 2015 through July 2016	\$67,000
August 2016 through July 2017	\$66,000
August 2017 through July 2018	\$26,000
August 2018 through July 2019	\$9,000

³ After the first three years of O&M groundwater sampling, pesticides and PCBs were no longer included on the parameter list for routine sampling since these parameters were below detection.

III. PROGRESS SINCE THE PREVIOUS REVIEW

This section includes the protectiveness determinations and statements from the previous FYR Report. There were no recommendations provided in the previous FYR Report.

Table 5: Protectiveness Determinations/Statements from the 2016 FYR Report

OU #	Protectiveness Determination	Protectiveness Statement
Sitewide	Short-term Protective	The site's remedy currently protects human health and the environment because waste material has been excavated from Little Sixmile Creek and residual contamination is contained beneath a landfill cover system. Restrictions are in place to prevent groundwater use and future land uses that could damage the remedial components. For the remedy to remain protective over the long term, issues concerning O&M and remedy performance should be addressed.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Community Involvement and Site Interviews

A public notice was made available by a public notice published in the *Florida Times Union* newspaper, on 11/25/2020 (Appendix D). It stated that the FYR was underway and invited the public to submit any comments to the EPA. The results of the review and the report will be made available at the site's information repository, Highlands Branch Public Library, located at 1826 Dunn Avenue in Jacksonville, Florida.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The interviews are summarized below. Appendix E provides the complete interviews.

Kristi Hess: Ms. Hess works for Golder and Associates, Inc., a consulting firm retained by the PRLS Group to conduct O&M activities at the site. She said that the remedy is protective of human health and the environment and is functioning as designed. The 20-year O&M period has been completed. Benzene and vinyl chloride in site groundwater are below the ACLs. Arsenic concentrations are consistently above the MCL in SMW-18 and SMW-21; however, the concentrations appear to be slowly decreasing. There have been no unexpected O&M difficulties or costs at the site in the last five years.

Miranda McClure: Ms. McClure is the FDEP project manager for the site. She stated that the project has had active remedial cleanup and it is currently in groundwater monitoring. She believes that the monitoring is not adequate at the site because the PRP is not using the current MCLs for arsenic and lead in groundwater. Therefore, to measure remedy effectiveness she has made recommendations to revise the current monitoring plan for sampling point-of-compliance wells and modify the requirements to reflect the current MCLs for arsenic and lead. Ms. McClure stated that FDEP would like to see the site be placed in re-use.

Data Review

The PRLS Group monitors groundwater to determine if the landfill remedy is limiting the infiltration of waste to groundwater and to ensure groundwater is not migrating downgradient to Little Sixmile Creek. The data review demonstrates that the groundwater remedy has achieved the ACLs for the two site COCs (benzene and vinyl chloride). In addition, groundwater samples collected from the deep Rock Aquifer wells and Hawthorne contact wells show that VOCs and inorganic contaminants have not been reported in samples above the respective MCLs, demonstrating that vertical migration to these deeper zones is not occurring. The landfill gas results continue to support that methane levels do not exceed the combustible levels outside the landfill footprint. A more detailed summary of the data is provided below.

Groundwater

The PRLS Group conducted groundwater sampling, as required by the ROD, for 20 years. The PRLS Group sampled shallow wells in the Upper Sand Aquifer (designated as SMWs) and the deeper Rock Aquifer (designated as DMWs) and Hawthorne contact wells (designated as HCWs). Up through 2017, the PRLS Group sampled two upgradient well clusters in the surficial aquifer consisting of Upper Sand and the deeper Rock Aquifer monitoring wells (SMW/DMW-1 and SMW/DMW-16) and one upgradient shallow well (SMW-22). In addition, the PRPs sampled 11 Upper Sand Aquifer wells (SMWs), four deeper Rock Aquifer wells (DMWs) and two Hawthorne contact wells (HCWs) at the site perimeter (Figure 4). Groundwater sampling ended in June 2017 with subsequent sampling of two wells every five years for arsenic. A copy of the historical laboratory analytical results is provided in Appendix H in Table H-1. The 2020 analytical results for SWM-18 and SMW-21 are presented in Table H-2.

COC Data

Review of the groundwater data since the previous FYR shows that the two groundwater COCs (benzene and vinyl chloride) are below detection in all wells.

Other Monitored Contaminants

The 1993 Remedial Design Report required analysis of groundwater samples for other contaminants to ensure contamination from landfill waste is not migrating to groundwater. Review of the groundwater data since the previous FYR shows that most VOCs and inorganic compounds are below detection or below the respective MCLs in the Rock Aquifer and Hawthorne contact wells with a few exceptions:

- Lead – Detected since 2010 fluctuating above and below the state and federal MCL of 15 µg/L (Table 6).
- Arsenic – Detected consistently in monitoring wells SMW-10, SMW-18 and SMW-21 above the MCL since 2010 (Table 7). The concentrations remain elevated, but the concentrations are lower than observed in 2008 when the 2008 Evaluation of Arsenic in the Groundwater Surface Water Interface was conducted demonstrating groundwater is not impacting surface water.⁴

These results indicate that the remedy is effectively limiting contaminant migration.

⁴ The 2008 study evaluated the arsenic concentrations in SMW-18 (270 µg/L) and SMW-21 (150 µg/L). The arsenic concentrations at the groundwater/surface water interface did not exceed the ROD cleanup goal of 50 µg/L and there was no apparent risk to the creek environment. Two of the 11 samples exceeded the current MCL of 10 µg/L, with dissolved concentrations ranging from 15 µg/L to 23 µg/L, while the remaining groundwater/surface water interface samples were below detection (< 10 µg/L).

Figure 4: Monitoring Well Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the site.

Table 6: Lead Concentrations in Upper Sand Aquifer Well SMW-10 (µg/L)

Well	Sample Date												
	Jul. 2010	Jan. 2011	Jul. 2011	Jan. 2012	Aug. 2012	Jan. 2013	Aug. 2013	Apr. 2014	Nov. 2014	Apr. 2015	Mar. 2016	Oct. 2016	Jun. 2017
SMW-10	<i>30</i>	<5	<i>17</i>	<i>11</i>	<i>240</i>	<5	<i>35</i>	<i>23</i>	<i>18</i>	<i>11</i>	<i>96</i>	<5	<i>100</i>

Notes:
µg/L = micrograms per liter
< 5 = lead was not detected above the laboratory detection limit of 5 µg/L
Bold italic = exceeds the federal and state MCL of 15 µg/L.
Source: 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site.
Prepared by Golder Associates, Inc. October 2017.

Table 7: Arsenic Concentrations Detected in Upper Sand Aquifer Wells (µg/L)

Well	Sample Date													
	Jul. 2010	Jan. 2011	Jul. 2011	Jan. 2012	Aug. 2012	Jan. 2013	Aug. 2013	May 2014	Nov. 2014	Apr. 2015	Mar. 2016	Oct. 2016	Jun. 2017	Feb. 2020
SMW-4	<i>47</i>	<i>37</i>	<i>28</i>	<i>39</i>	<i>23</i>	<i>23</i>	<i>86</i>	<i>36</i>	<i>23</i>	<i>36</i>	-	-	-	NS
SMW-7R	<10	<10	<10	<10	<10	<i>16</i>	<10	<10	<10	<i>12</i>	<i>23</i>	<i>17</i>	<10	NS
SMW-9	<i>21</i>	<i>18</i>	<i>14</i>	<i>23</i>	<i>21</i>	<i>15</i>	<i>16</i>	<i>43</i>	<i>12</i>	<i>13</i>	<10	<10	<10	NS
SMW-10	<i>43</i>	<i>29</i>	<i>34</i>	<i>40</i>	<i>78</i>	<i>43</i>	<i>33</i>	<i>35</i>	<i>38</i>	<i>31</i>	<i>39</i>	<i>33</i>	<i>47</i>	NS
SMW-18	<i>160</i>	<i>240</i>	<i>260</i>	<i>300</i>	<i>250</i>	<i>240</i>	<i>230</i>	<i>200</i>	<i>190</i>	<i>190</i>	<i>200</i>	<i>120</i>	<i>160</i>	<i>170</i>
SMW-21	<i>130</i>	<i>120</i>	<i>110</i>	<i>130</i>	<i>130</i>	<i>130</i>	<i>130</i>	<i>120</i>	<i>120</i>	<i>120</i>	<i>120</i>	<i>110</i>	<i>110</i>	<i>100</i>

Notes:
µg/L = micrograms per liter
< 5 = arsenic was not detected above the laboratory detection limit of 10 µg/L
Bold italic = value exceeds the current federal and state MCL of 10 µg/L.
NS – well no longer sampled.
- = well inaccessible for sampling.
Source: 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site.
Prepared by Golder Associates, Inc. October 2017.

Landfill Gas

The gas collection trench extends along the landfill perimeter, except for the side next to Little Sixmile Creek. The gas monitoring system consists of 41 gas probes (GP-1 to GP-43; based on field conditions, GP-17 and GP-21 were not installed) (Figure 4). The PRLS Group installed probes about every 200 feet outside the trench, and every 400 feet inside the trench (Figure 5). The PRLS Group conducts landfill gas monitoring on a semi-annual basis. During these events, the PRLS Group samples gas probes for methane and inspects the landfill area for evidence of gas seepage, such as stressed vegetation, cracks in the surface layer and unusual odors. A review of the four gas probe sampling events that occurred between March 2015 and April 2017 indicates that the system is functioning as designed. The gas probes exceeding lower explosive limit (LEL) of 5% for methane predominantly occur inside the gas collection trench while probes outside the gas collection trench were generally below the action level of 5% for methane. Several probes located outside the trench exceed the LEL for methane but there were no consistent exceedances in the same probes. Overall, the methane monitoring shows that methane gas is not migrating from the landfill however, methane monitoring should continue until the outer probes remain below the LEL.

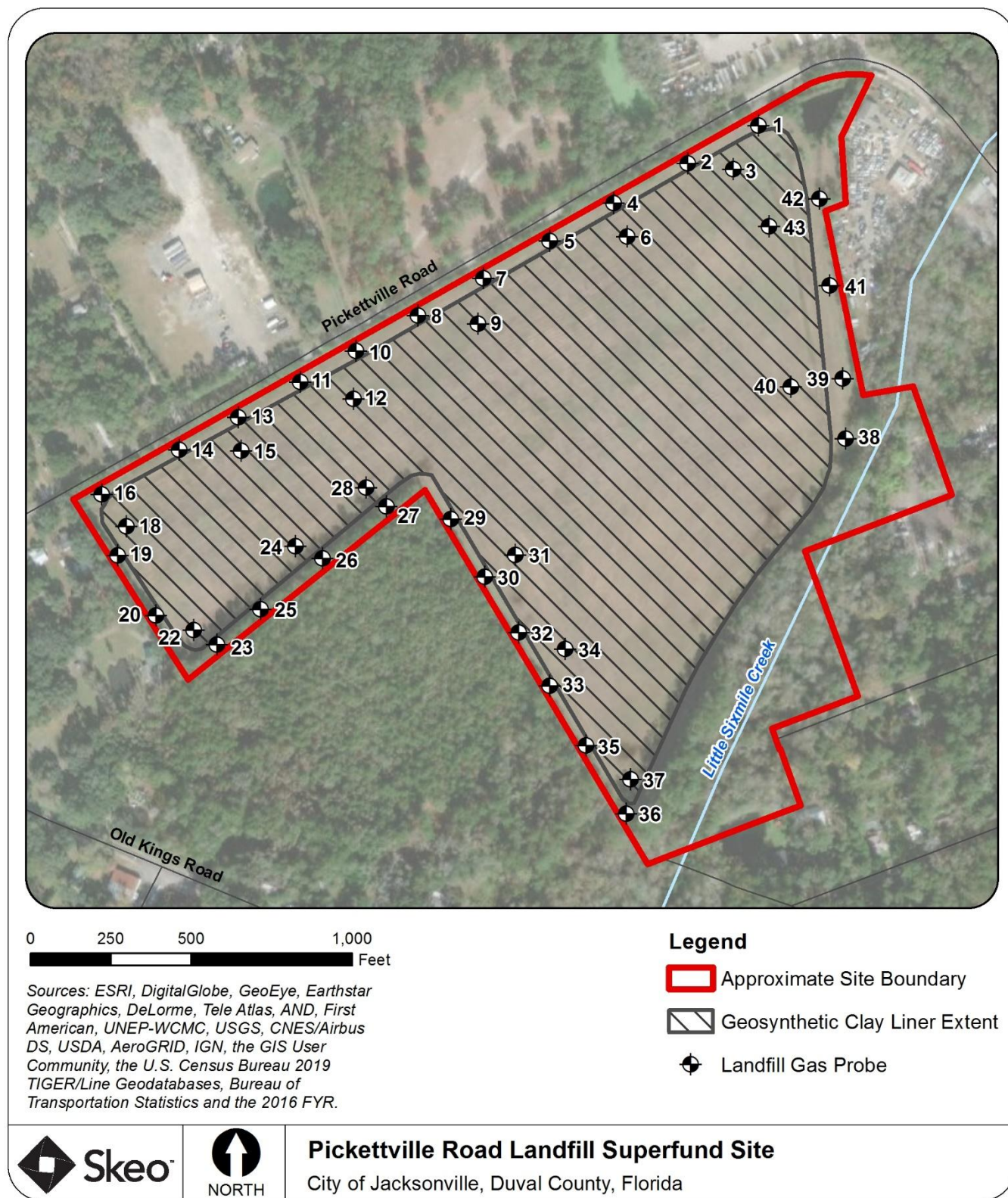
Site Inspection

The site inspection took place on 10/20/2020. Participants included EPA RPM Scott Martin, the PRPs contractor representatives Don Miller and Kristi Hess with Golder Associates, Inc., and Claire Marcussen from EPA FYR support contractor Skeo. The purpose of the inspection was to assess the protectiveness of the remedy. The site inspection checklist and photographs are provided in Appendix F and Appendix G, respectively.

Participants met at the gated access road off Pickettville Road at the northeast corner of the site. The road was in good condition. Participants viewed the landfill cap that was recently mowed, and the cap was completely covered with thick grass. No trees or shrubs were observed on the landfill. Monitoring wells along the perimeter of the landfill were labelled and most were locked. A lock on one well was missing however the well is located within the secured site area. The lock will be replaced as part of the routine O&M activities. The passive landfill gas vents were observed to be in good condition. The drainage ditches and ponds were well maintained and clear of debris. Warning signs occur about every 50 feet along the chain-link perimeter fence. The fence was in good condition and any damage that has occurred as observed in the monitoring reports is repaired as part of the routine O&M activities. The main entrance gate sign was damaged and no longer legible and will be replaced as part of the routine O&M activities. The EPA explained that discussions have taken place about future use of the site for recreational purposes or for creating solar energy through solar panel arrays. However, no definitive plans have been made at this time.

On October 14, 2020, contractor staff contacted the designated site's information repository at the Highlands Branch Public Library, located at 1826 Dunn Avenue, Jacksonville, Florida. Discussions with the librarian indicated they do not have any government collections at the branch and indicated that they are located at the main branch in downtown Jacksonville.

Figure 5: Landfill Gas Probe Locations



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the site.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:

Yes. The remedy appears to be functioning to address the two groundwater COCs, benzene and vinyl chloride. ACLs have been achieved in all monitoring wells. The 1990 ROD included the installation of three deep Floridan Aquifer monitoring wells to determine the vertical extent of groundwater contamination. According to the site's 1993 Final Remedial Design Report, groundwater monitoring of the Floridan Aquifer was not included because of the extensive thickness of the low-permeability Hawthorne Group (Upper Confining Unit) as well as the significant upward gradient from the Floridan Aquifer System. Removing the remedy component of installing three deep Floridan Aquifer monitoring wells may need to be included in a decision document.

Arsenic is not a COC but was consistently above its MCL (10 µg/L) in more than one Upper Sand Aquifer well during the previous five years. Institutional controls are in place that restrict the use of site groundwater from the Upper Sand Aquifer. These controls also restrict the use of the site for residential, commercial or industrial purposes (unless allowed by the Consent Decree) and restrict disturbance of remedy components. The institutional controls in place may be too restrictive for future site uses as long as the remedy components are not compromised.

The landfill cover, stormwater management and gas control systems are regularly maintained. The site is surrounded by fencing to prevent unauthorized access. In September 2019, an inspection was conducted after Hurricane Dorian crossed the area. Several landfill gas probes were damaged and repaired. In February 2020, a portion of the fence was damaged near monitoring well SWM-8 and a tree damaged the fence near SWM-19. Repairs are conducted as part of routine O&M activities. The monitoring wells remain in good condition and no erosion has been documented in site inspection reports. During this FYR site inspection, the access controls were found to be in good condition.

Restoration of Little Sixmile Creek is complete. A final ecological study indicated no ecological impacts from the site and that further restoration was not necessary.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of the remedy selection still valid?

Question B Summary:

Yes. The 1990 ROD cleanup goals for groundwater COCs benzene and vinyl chloride were based on ACLs rather than Applicable or Relevant and Appropriate Requirements (ARARs). The ACLs were based on the detection limit for these two compounds and a dilution factor derived from the groundwater velocity and creek flow rate. There were no changes to these factors used in calculating the ACLs since the ROD. The ACLs were set such that the migration of contaminants from the landfill at or below the ACLs will be protective of surface water quality at the point of discharge. The data review shows that, over the past five years, concentrations of several inorganic contaminants exceed the MCLs in the Upper Sand Aquifer but are below MCLs in the deep Rock Aquifer wells and Hawthorne contact wells, and restrictions are in place that prevent exposure to site groundwater. Several landfill gas probes located outside the trench exceed the LEL for methane but there were no consistent exceedances in the

same probes. Overall, the methane monitoring shows that methane gas is not migrating from the landfill however, methane monitoring should continue until all the outer probes remain consistently below the LEL. In addition, the PRLS Group has demonstrated that discharge of groundwater to Little Sixmile Creek does not impact the creek.

When remedial plans were developed for the site, vapor intrusion (the migration of vapors from contaminated groundwater to the ground surface) was not considered. As more information on vapor intrusion has become available, the EPA has developed guidance for evaluating this exposure pathway when groundwater is contaminated with VOCs. The vapor intrusion pathway currently does not pose a significant risk at the site because there are no occupied buildings, groundwater contamination is contained on-site, the site is located in a groundwater delineated area and groundwater is not being used as a drinking water source. Restrictions in place prevent the construction of buildings that would disturb the remedial components. VOCs in the Upper Sand Aquifer have declined over time. Most VOCs are below detection, but there are low-level detections of four VOCs in SMW-10, SMW-17, SMW-18, SMW-19, SMW-20 and SMW-21. Due to the presence of a home on the western border of the site, albeit upgradient of the landfill, a conservative screening-level vapor intrusion evaluation was conducted using the most current VOC groundwater data. The results demonstrate that this exposure pathway does not pose a health concern (Appendix I).

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
OU-1

OTHER FINDINGS

This recommendation does not affect current and/or future protectiveness.

- Evaluate the status of the O&M Plan and sampling frequency.

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement	
<i>Protectiveness Determination:</i>	Protective
<i>Protectiveness Statement:</i> The site's remedy protects human health and the environment because waste material has been excavated from Little Sixmile Creek and residual contamination is contained beneath a landfill cover system. In addition, restrictions are in place to prevent groundwater use and future land uses that could damage the remedial components.	

VIII. NEXT REVIEW

The next FYR Report for the Pickettville Road Landfill Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. October 2017.

CERCLA Information System Site Information accessed from website <https://www.epa.gov/superfund/pickettville-road-landfill>. Accessed May 19, 2020.

EPA Record of Decision: Pickettville Road Landfill EPA ID: FLD980556351. Prepared by the U.S. EPA Region 4. September 28, 1990.

Explanation of Significant Differences. Pickettville Road Superfund Site, Jacksonville, Duval County, FL. Prepared by U.S. EPA Region 4. March 1996.

First Five-Year Review Report, Pickettville Road Landfill, Jacksonville, Duval County, Florida. Prepared by U.S. Army Corps of Engineers. September 1999.

Focused Feasibility Study, Pickettville Road Landfill Site, Jacksonville, Florida. Prepared by Golder Associates, Inc. April 2003.

Fourth Five-Year Review Report for Pickettville Road Landfill Superfund Site, Jacksonville, Duval County, Florida. Prepared for U.S. EPA Region 4. February 2016.

Groundwater Monitoring Report, O&M Sampling Event, 2015 Annual Groundwater Monitoring Report, Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. July 2016.

Groundwater Monitoring Report, O&M Sampling Event, 2016 Annual Groundwater Monitoring Report, Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. February 2017.

March 2020 Data Submittal. Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. March 2020.

Preliminary Close-Out Report. Pickettville Road Landfill, Jacksonville, Duval County, Florida. Prepared by U.S. EPA Region 4. September 2008.

Remedial Action Report, Pickettville Road Landfill Site, Jacksonville, Florida. Prepared by Golder Associates, Inc. March 1997.

Remediation Design Report, Pickettville Road Landfill Site, Jacksonville, Florida. Prepared by Golder Associates, Inc. September 1993.

Response to FDEP Comments on the 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. July 2018.

Results of Evaluation of Arsenic in Groundwater Surface Water Interface, Little Sixmile Creek. Pickettville Road Landfill Site, Jacksonville, Florida. Prepared by Golder Associates, Inc. September 2008.

Review of the 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site. Prepared by FDEP. May 2018.

Revised Groundwater Monitoring Plan Pickettville Road Landfill Site, Jacksonville, Florida. Prepared by Golder Associates, Inc. June 1993.

Revised Remediation Goal Verification Plan, Pickettville Road Landfill Site, Jacksonville, Florida. Prepared by Golder Associates, Inc. February 1994.

Second Five-Year Review Report for Pickettville Road Landfill Superfund Site, Jacksonville, Duval County, Florida. Prepared for U.S. EPA Region 4. January 2006.

Third Five-Year Review Report for Pickettville Road Landfill Superfund Site, Jacksonville, Duval County, Florida. Prepared for U.S. EPA Region 4. February 2011.

APPENDIX B – CURRENT SITE STATUS

Environmental Indicators

- Current human exposures at the site are under control.
- Current groundwater migration is under control.

Are Necessary Institutional Controls in Place?

☒ All ☐ Some ☐ None

Has the EPA Designated the Site as Sitewide Ready for Anticipated Use?

☒ Yes ☐ No

Has the Site Been Put into Reuse?

☐ Yes ☒ No

APPENDIX C – SITE CHRONOLOGY

Table C-1: Site Chronology

Event	Date
The Duval County Department of Health and Welfare conducted Site inspections	1975 and 1976
The EPA completed a preliminary assessment at the Site	March 1, 1980
The EPA completed a Site investigation at the Site	May 1, 1980
The EPA discovered contamination at the Site	June 1, 1981
The EPA proposed the Site for listing on the NPL	December 30, 1982
The EPA finalized the Site's listing on the NPL	September 8, 1983
PRPs began the RI/FS	September 30, 1984
The EPA and PRPs entered into an Administrative Order on Consent to complete the RI/FS	February 10, 1986
PRPs completed the RI/FS	March 5, 1990
The EPA revised the FS Report and performed a Site-specific risk assessment	June 8, 1990
The EPA signed the Site's ROD	September 28, 1990
The EPA issued a Unilateral Administrative Order to the PRPs to complete the remedial design and remedial action	June 28, 1991
The PRPs initiated phase I of the remedial design	February 6, 1992
PRPs completed the remedial design and initiated the remedial action for phase I; PRPs initiated the remedial design for phase II	April 23, 1992
The EPA and PRPs entered into a Consent Decree to complete the Site remedial action	April 24, 1992
PRPs completed the remedial action for phase I	July 1, 1993
PRPs filed institutional control documents for the easement and Site property	July 29, 1993
PRPs completed the remedial design for phase II and initiated the remedial action for phase II	September 3, 1993
The EPA signed the ESD to change the landfill cover system from a clay barrier layer to a GCL	March 21, 1996
PRPs completed the remedial action for phase II	July 14, 1997
The EPA and PRPs enter into a Consent Decree requiring the PRPs to reimburse remedial action costs to the EPA	September 24, 1998
The EPA completed the Site's first FYR Report	September 29, 1999
PRPs completed a focused FS	April 9, 2003
The EPA completed the Site's second FYR Report	January 31, 2006
PRPs completed supplemental groundwater and surface water investigations	September 1, 2008
The EPA issued the Site's PCOR	September 24, 2008
The EPA completed the Site's third FYR Report	February 23, 2011
The EPA completed the Site's fourth FYR Report	February 24, 2016
PRP completed the final Consent Decree-mandated Groundwater Monitoring Report	October 4, 2017

APPENDIX D – PRESS NOTICE



The U.S. Environmental Protection Agency, Region 4 Announces the Fifth Five-Year Review for the Pickettville Road Landfill Superfund Site, Jacksonville, Duval County, FL

Purpose/Objective: The EPA is conducting a Five-Year Review of the remedy for the Pickettville Road Landfill Superfund site (the Site) in Jacksonville, FL. The purpose of the Five-Year Review is to make sure the selected cleanup actions effectively protect human health and the environment.

Site Background: The 52-acre area is located 5 miles northwest of downtown Jacksonville. In the 1940s, borrow pit operations for sand and limited disposal activities began at the site property. During this time, disposal wastes included waste oil, lead-acid battery liquid waste, battery casings, light terpene sludge and polychlorinated biphenyls. In 1968, the city of Jacksonville leased the site property and started full-scale landfill operations. The landfill accepted all types of waste. In 1971, municipal wastes were sent to other landfills and the landfill served as a hazardous waste disposal facility. Routine inspections by Duval County's Department of Health and Welfare in 1975 and 1976 identified inadequate waste disposal and maintenance practices. Landfill operations ceased in July 1977. The EPA sampled groundwater, surface water, soil and leachate, and identified metals and volatile organic compounds in soil and groundwater. The EPA listed the Site on the Superfund program's National Priorities List in September 1983.

Cleanup Actions: The EPA selected the final remedy to address contaminated soil and groundwater in the Site's 1990 Record of Decision. It consisted of restricting site access, groundwater use and future site redevelopment; plugging and abandoning water supply wells; extending the municipal water supply as an alternative drinking water source; installing a cover system; restoring Little Six-Mile Creek; and conducting operation and maintenance activities. All remedy construction activities finished in September 2008. Groundwater and landfill gas monitoring are ongoing.

Five-Year Review Schedule: The National Contingency Plan requires review of remedial actions that result in any hazardous substances, pollutants or contaminants remaining at a site above levels that allow for unlimited use and unrestricted exposure every five years to ensure the protection of human health and the environment. The fifth of the Five-Year Reviews for the Site will be completed by February 2021. When the Five-Year Review is completed, it will be available online at: <https://www.epa.gov/superfund/search-superfund-five-year-reviews>.

The EPA Invites Community Participation in the Five-Year Review Process: The EPA is conducting this Five-Year Review to evaluate the effectiveness of the site remedy and to ensure that the remedy remains protective of human health and the environment. As part of the Five-Year Review process, EPA staff members are available to answer any questions about the Site. Community members who have questions about the Site or the Five-Year Review process, or who would like to participate in a community interview, are asked to contact:

Scott Martin, Remedial Project Manager
Coordinator
Phone: (404) 562-8916
Email: martin.scott@epa.gov

L'Tonya Spencer-Harvey, Community Involvement
Phone: (404) 562-8463
Email: spencer.latonya@epa.gov

Mailing Address: U.S. EPA Region 4, 61 Forsyth St. S.W., Atlanta, GA 30303-8960

Additional information is available at the Site's document repository, the Highlands Regional Branch of the Jacksonville Public Library, located at 1826 Dunn Avenue, Jacksonville, Florida 32218 (consider contacting the library to confirm it is open), and online at <https://www.epa.gov/superfund/pickettville-road-landfill>.

JV-0003319475-01

APPENDIX E – INTERVIEW FORMS

PICKETTVILLE ROAD LANDFILL SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Pickettville Road Landfill	
EPA ID: FLD980556351	
Interviewer name:	Interviewer affiliation:
Subject name: Kristi Hess	Subject affiliation: Golder Associates Inc.
Subject contact information: klhess@golder.com	
Interview date: 10/22/2020	Interview time: 2 pm
Interview location: Email Response	
Interview format (circle one): In Person Phone Mail <u>Email</u> Other:	
Interview category: O&M Contractor	

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

The landfill is in good condition. The 20-year O&M period specified in the ROD has been completed. Maintenance has continued beyond the O&M period to include cap maintenance, and maintenance of monitoring wells and the landfill gas system as needed, with no major issues. No reuse of the site is currently planned.

2. What is your assessment of the current performance of the remedy in place at the Site?

The remedy is protective of human health and the environment and is functioning as designed.

3. What are the findings from the monitoring data? What are the key trends in contaminant levels that are being documented over time at the Site?

Benzene and vinyl chloride concentrations in site groundwater are below the Alternate Cleanup Levels set forth in the ROD (115 µg/L). Arsenic concentrations are consistently above the ROD-specified MCL of 50 µg/L in groundwater samples from SMW-18 and SMW-21, however the concentrations appear to be slowly decreasing.

4. Is there a continuous on-site O&M presence? If so, please describe staff responsibilities and activities. Alternatively, please describe staff responsibilities and the frequency of site inspections and activities if there is not a continuous on-site O&M presence.

The site is a closed landfill, and there is not a continuous on-site O&M presence. O&M site inspections prior to the end of the 20-year OM&M period (July 2017) were conducted semi-annually. Since then the site is inspected annually.

5. Have there been any significant changes in site O&M requirements, maintenance schedules or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

The 20-year OM&M period has ended, with the last CD-mandated OM&M event conducted in June and July 2017 (site inspection and gas and groundwater monitoring). During the 20-year OM&M period, O&M inspections, groundwater monitoring, and gas monitoring were conducted semi-annually. In the October 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Golder proposed to eliminate gas monitoring, conduct groundwater monitoring for arsenic only at SMW-18 and SMW-21 every five years (one year ahead of the five-year review due date), and to conduct O&M inspections annually. The reduction in monitoring will not affect the protectiveness or effectiveness of the remedy.

6. Have there been unexpected O&M difficulties or costs at the Site since start-up or in the last five years? If so, please provide details.

There have been no unexpected O&M difficulties or costs at the site in the last five years.

7. Have there been opportunities to optimize O&M activities or sampling efforts? Please describe changes and any resulting or desired cost savings or improved efficiencies.

Reduction in OM&M activities and frequency as detailed below would result in cost savings:

- *Elimination of gas monitoring*
- *Reduce groundwater monitoring from semi-annual to every five years (ahead of the five-year review due date) and limit sampling to SMW-18 and SMW-21 with analysis of arsenic only.*
- *Reduce O&M inspections from semi-annual to annual*

8. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site?

As proposed in the October 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Golder recommends eliminating gas monitoring, conducting groundwater monitoring for arsenic only at SMW-18 and SMW-21 every five years (one year ahead of the five-year review due date), and conducting O&M inspections annually.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes.

PICKETTville ROAD LANDFILL SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM	
Site Name: Pickettville Road landfill	
EPA ID: FLD980556351	
Interviewer name: Self	Interviewer affiliation: FDEP
Subject name: Miranda McClure	Subject affiliation: FDEP
Subject contact information: Miranda.McClure@floridadep.gov	
Interview date: 11/1/2020	Interview time:
Interview location:	
Interview format (circle one): In Person Phone Mail <u>Email</u> Other:	
Interview category: State Agency	

- What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?
The project has had active remedial cleanup and it is currently in groundwater monitoring. FDEP does not believe EPA is adequately monitoring the Site, however, because they are not addressing the ARARs by not using the current MCLs for arsenic and lead in groundwater and therefore long-term cleanup measurements are unknown. Furthermore, the property is currently not being reused and is vacant. It would be more beneficial to the community and property values if there could be some reuse plan for the property.
- What is your assessment of the current performance of the remedy in place at the Site?
The remedy cannot be determined effective long-term if there is not long-term protectiveness. The requirements for measuring effectiveness are not being maintained. The current monitoring plan should include FDEP's recommendations for sampling point-of-compliance wells (as stated in the ROD) and should modify the requirements to reflect the current MCLs/GCTLs for arsenic and lead so that delineation of the groundwater and monitoring is effectively done (see responses to question 8). The last FYR cites the ROD stating the MCLS are ARARs for the Site and therefore should be implemented and maintained.
- Are you aware of any complaints or inquiries regarding Site-related environmental issues or remedial activities from residents in the past five years?
No
- Has your office conducted any Site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.
My office has not conducted any Site related activities; however, communications have occurred regarding recommendations and reviews on groundwater monitoring events.
- Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?
Yes, the current groundwater level for arsenic should be reflected as 0.01 mg/L and lead should be reflected as 0.015 mg/L.
- Are you comfortable with the status of the institutional controls at the Site? *Yes*

If not, what are the associated outstanding issues?

7. Are you aware of any changes in projected land use(s) at the Site?

No

8. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

Yes; in 2018, FDEP gave EPA review comments regarding review of the 2017 Semi-Annual groundwater monitoring report and had the following comments:

- 1. Arsenic concentrations have consistently been above the Groundwater Cleanup Target Levels (GCTLs) in SMW-4. FDEP recommended SMW-4 be replaced with another monitoring well in the same location.*
- 2. Lead and arsenic have consistently been above the GCTLs for SMW-10. Monitoring should continue for lead and arsenic for SMW-10.*
- 3. Arsenic concentrations in the groundwater samples collected from SMW-18 and SMW-21 have shown a stable trend since 2008, however, the levels are still above the GCTL of 0.01 mg/L.*
- 4. Based on historical groundwater analytical data, we recommend that annual monitoring be continued at the point-of-compliance wells, SMW-4R, SMW-7R, SMW-9, SMW-10, SMW-18, SMW-21 (as stated in the ROD).*

EPA's response was that the NAM plan is based on the 1990's ARAR and GCTL/MCLs and therefore the current levels don't need to be adhered to. These need to be revised and revisited to reflect the current arsenic and lead levels (0.01 mg/L and 0.015 mg/L respectively). Based on the current MCLs and GCTLs, the above recommendations should be considered for the NAM plan.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes

APPENDIX F – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST			
I. SITE INFORMATION			
Site Name: Pickettville Road Landfill		Date of Inspection: October 20, 2020	
Location and Region: Jacksonville, FL/EPA Region 4		EPA ID: FLD980556351	
Agency, Office or Company Leading the Five-Year Review: EPA Region 4		Weather/Temperature: Cloudy/rain, 82 degrees F	
Remedy Includes: (Check all that apply) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Ground water pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other: _____ </div> <div style="width: 50%;"> <input checked="" type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Ground water containment <input type="checkbox"/> Vertical barrier walls </div> </div>			
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (check all that apply)			
1. O&M Site Manager <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> Name _____ Title _____ </div> <div style="width: 45%;"> Date _____ </div> </div> Interviewed <input type="checkbox"/> at Site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____ Problems, suggestions <input type="checkbox"/> Report attached: _____			
2. O&M Staff <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> Name <u>Kristi Hess, P.G.</u> Title _____ </div> <div style="width: 45%;"> <u>Senior Geologist</u> Date <u>10/22/2020</u> </div> </div> Interviewed <input type="checkbox"/> at Site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____ Problems/suggestions <input type="checkbox"/> Report attached: _____			
3. Local Regulatory Authorities and Response Agencies (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply. <div style="margin-top: 20px;"> Agency _____ Contact _____ Name _____ Title _____ Date _____ Phone No. _____ Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 20px;"> Agency <u>Florida Department of Environmental Protection</u> Contact <u>Miranda McClure</u> Name _____ Title <u>Project Manager</u> Date <u>11/01/2020</u> Phone No. _____ Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 20px;"> Agency _____ Contact _____ Name _____ Title _____ Date _____ Phone No. _____ Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 20px;"> Agency _____ Contact _____ Name _____ Title _____ Date _____ Phone No. _____ Problems/suggestions <input type="checkbox"/> Report attached: _____ </div> <div style="margin-top: 20px;"> Agency _____ Contact _____ Name _____ Title _____ Date _____ Phone No. _____ Problems/suggestions <input type="checkbox"/> Report attached: _____ </div>			

4.	Other Interviews (optional) <input type="checkbox"/> Report attached: _____			
III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)				
1.	O&M Documents <input type="checkbox"/> O&M manual <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A <input type="checkbox"/> As-built drawings <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Maintenance logs <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: _____			
2.	Site-Specific Health and Safety Plan <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Contingency plan/emergency response plan <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: _____			
3.	O&M and OSHA Training Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Other permits: _____ <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
5.	Gas Generation Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
6.	Settlement Monument Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
7.	Ground Water Monitoring Records <input checked="" type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A Remarks: _____			
8.	Leachate Extraction Records <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Water (effluent) <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
10.	Daily Access/Security Logs <input type="checkbox"/> Readily available <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A Remarks: _____			
IV. O&M COSTS				
1.	O&M Organization <input type="checkbox"/> State in-house <input type="checkbox"/> Contractor for state <input type="checkbox"/> PRP in-house <input checked="" type="checkbox"/> Contractor for PRP <input type="checkbox"/> Federal facility in-house <input type="checkbox"/> Contractor for Federal facility			
2.	O&M Cost Records <input type="checkbox"/> Readily available <input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Funding mechanism/agreement in place <input type="checkbox"/> Unavailable Original O&M cost estimate: _____ <input type="checkbox"/> Breakdown attached Total annual cost by year for review period if available From: 08/01/2014 To: 07/31/2015 \$75,000 <input type="checkbox"/> Breakdown attached Date Date Total cost From: 08/01/2015 To: 07/31/2016 \$67,000 <input type="checkbox"/> Breakdown attached Date Date Total cost From: 08/01/2016 To: 07/31/2017 \$66,000 <input type="checkbox"/> Breakdown attached Date Date Total cost			

Aerial extent: _____ Remarks: _____		Depth: _____	
4.	Holes Aerial extent: _____ Remarks: _____	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> Holes not evident Depth: _____
5.	Vegetative Cover <input checked="" type="checkbox"/> No signs of stress Remarks: _____	<input checked="" type="checkbox"/> Grass <input type="checkbox"/> Trees/shrubs (indicate size and locations on a diagram)	<input checked="" type="checkbox"/> Cover properly established
6.	Alternative Cover (e.g., armored rock, concrete) Remarks: _____	<input checked="" type="checkbox"/> N/A	
7.	Bulges Aerial extent: _____ Remarks: _____	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> Bulges not evident Height: _____
8.	Wet Areas/Water Damage <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks: _____	<input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on Site map <input type="checkbox"/> Location shown on Site map <input type="checkbox"/> Location shown on Site map <input type="checkbox"/> Location shown on Site map	Aerial extent: _____ Aerial extent: _____ Aerial extent: _____ Aerial extent: _____
9.	Slope Instability <input checked="" type="checkbox"/> No evidence of slope instability Aerial extent: _____ Remarks: _____	<input type="checkbox"/> Slides	<input type="checkbox"/> Location shown on Site map
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
C. Letdown Channels <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement (Low spots) Aerial extent: _____ Remarks: _____	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> No evidence of settlement Depth: _____
2.	Material Degradation Material type: _____ Remarks: _____	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> No evidence of degradation Aerial extent: _____
3.	Erosion Aerial extent: _____ Remarks: _____	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> No evidence of erosion Depth: _____
4.	Undercutting Aerial extent: _____ Remarks: _____	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> No evidence of undercutting Depth: _____
5.	Obstructions <input type="checkbox"/> Location shown on Site map Size: _____ Remarks: _____	Type: _____ Aerial extent: _____	<input checked="" type="checkbox"/> No obstructions
6.	Excessive Vegetative Growth <input checked="" type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on Site map Remarks: _____	Type: _____ Aerial extent: _____	
D. Cover Penetrations <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Gas Vents <input checked="" type="checkbox"/> Properly secured/locked <input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Active <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> Needs maintenance	<input checked="" type="checkbox"/> Passive <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> N/A

Remarks: _____			
2.	Gas Monitoring Probes <input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: _____		
3.	Monitoring Wells (within surface area of landfill) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs maintenance <input checked="" type="checkbox"/> N/A Remarks: _____		
4.	Extraction Wells Leachate <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs maintenance <input checked="" type="checkbox"/> N/A Remarks: _____		
5.	Settlement Monuments <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input checked="" type="checkbox"/> N/A Remarks: _____		
E. Gas Collection and Treatment <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
F. Cover Drainage Layer <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
G. Detention/Sedimentation Ponds <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
H. Retaining Walls <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
I. Perimeter Ditches/Off-Site Discharge <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	Siltation <input type="checkbox"/> Location shown on Site map <input checked="" type="checkbox"/> Siltation not evident Area extent: _____ Depth: _____ Remarks: _____		
2.	Vegetative Growth <input type="checkbox"/> Location shown on Site map <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Vegetation does not impede flow Area extent: _____ Type: _____ Remarks: _____		
3.	Erosion <input type="checkbox"/> Location shown on Site map <input checked="" type="checkbox"/> Erosion not evident Area extent: _____ Depth: _____ Remarks: _____		
4.	Discharge Structure <input checked="" type="checkbox"/> Functioning <input type="checkbox"/> N/A Remarks: _____		
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
IX. GROUND WATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Ground Water Extraction Wells, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
B. Surface Water Collection Structures, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
C. Treatment System <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
D. Monitoring Data			
1.	Monitoring Data <input checked="" type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring Data Suggests: <input checked="" type="checkbox"/> Ground water plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining		
E. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition <input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: <u>Most wells were locked except one along the eastern boundary and the lock will be replaced as part of the routine O&M activities at the Site.</u>		
X. OTHER REMEDIES			
If there are remedies applied at the Site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			

	<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions).</p> <p><u>The selected remedy continues to function as designed. The capped portion of the Site remains functional, institutional controls are in place to prevent use that would result in the creation of an exposure pathway or disrupt the remedy in place.</u></p>
B.	Adequacy of O&M
	<p>Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p><u>O&M at the Site remains adequate to maintain the vegetative cover and proper drainage. The monitoring wells, gas vents and gas probes were all found to be in working condition. Any breaches in the fence or animal burrows are addressed as needed during O&M inspections.</u></p>
C.	Early Indicators of Potential Remedy Problems
	<p>Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p><u>No potential remedy problems evident.</u></p>
D.	Opportunities for Optimization
	<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p><u>The volatile organic compounds have continued to decline, however, the reducing conditions under the cap have been the likely cause of arsenic concentrations in several downgradient wells that exceed the current MCL of 10 µg/L. Groundwater/surface water interface studies conducted in 2008 show that arsenic is not reaching the creek.</u></p>

APPENDIX G – SITE INSPECTION PHOTOS



Secured gated entrance northeast corner of the Site



Landfill cover looking north



Landfill cover looking west



Landfill cover looking east



Landfill passive gas vent



Landfill gas vent sampling port



Drainage Ditch #1 looking east



Drainage Ditch #3 looking north



Monitoring well DMW-8 (foreground) and SMW-8 (background)



Unlocked monitoring well along eastern Site boundary



Secured fence along Pond #2 in the southern portion of the Site



Pond #1 at the northeastern corner of the Site

APPENDIX H – DATA TABLES

Table H-1: Summary of Historical Laboratory Analytical Results of Select Wells

SUMMARY OF LABORATORY ANALYTICAL RESULTS:
MONITORING WELL SMW-4

COMPOUNDS	MCL/ SMCL (1) (mg/L)	Dilution Factor Standard (mg/L) (4)	7/27/2007 SMW-4 (mg/L)	1/12/2008 SMW-4 (mg/L)	7/27/2008 SMW-4 (mg/L)	1/20/2009 SMW-4 (mg/L)	7/28/2009 SMW-4 (mg/L)	1/29/2010 SMW-4 (mg/L)	1/29/2010 SMW-4 (mg/L)	7/26/2010 SMW-4 (mg/L)	1/11/2011 SMW-4 (mg/L)	7/22/2011 SMW-4 (mg/L)	1/27/2012 SMW-4 (mg/L)	8/7/2012 SMW-4 (mg/L)	DUP 8/7/2012 SMW-4 (mg/L)	1/29/2013 SMW-4 (mg/L)	DUP 1/29/2013 SMW-4 (mg/L)	7/26/2013 SMW-4 (mg/L)	5/7/2014 SMW-4 (mg/L)	11/11/2014 SMW-4 (mg/L)	4/10/2015 SMW-4 (mg/L)
METALS																					
Arsenic	0.05	8.00	0.062	0.038	0.063	0.029	0.032	0.045	0.026	0.023	0.047	0.037	0.028	0.039	0.023	0.02	0.023	0.022	0.036	0.023	0.036
Barium	2.00	160.00	0.16	0.15	0.11	0.12	0.12	0.15	0.13	0.13	0.13	0.11	0.12	0.12	0.13	0.13	0.12	0.090	0.071	0.14	0.13
Chromium	0.10	14.992	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010
Lead	0.015	0.1488	0.046	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0068	0.0066	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020 F1
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.040	<0.040	<0.040	<0.040
Selenium	0.05	0.80	0.016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010
OTHER																					

SUMMARY OF LABORATORY ANALYTICAL RESULTS:
MONITORING WELL SMW-7/TR

COMPOUNDS	MCL/ SMCL (1) (mg/L)	Dilution Factor Standard (mg/L) (4)	7/27/2008 SMW-7R (mg/L)	1/14/2009 SMW-7R (mg/L)	7/26/2009 SMW-7R (mg/L)	1/28/2010 SMW-7R (mg/L)	7/27/2010 SMW-7R (mg/L)	1/11/2011 SMW-7R (mg/L)	7/21/2011 SMW-7R (mg/L)	1/26/2012 SMW-7R (mg/L)	8/1/2012 SMW-7R (mg/L)	1/27/2013 SMW-7R (mg/L)	7/23/2013 SMW-7R (mg/L)	5/6/2014 SMW-7R (mg/L)	11/10/2014 SMW-7R (mg/L)	4/5/2015 SMW-7R (mg/L)	3/8/2016 SMW-7R (mg/L)	10/13/2016 SMW-7R (mg/L)	DUP 10/13/2016 SMW-7R (mg/L)	6/5/2017 SMW-7R (mg/L)	DUP 6/5/2017 SMW-7R (mg/L)
METALS																					
Arsenic	0.05	8.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.016	<0.010	<0.010	<0.010	0.012	0.023	0.017	0.012	<0.010	<0.010
Barium	2.00	160.00	0.031	0.026	0.021	0.024	0.011	0.013	0.014	0.011	0.045	0.049	0.032	0.025	0.045	0.037	0.033	0.052	0.036	0.020	0.032
Chromium	0.10	14.992	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	0.015	0.1488	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	0.0056	<0.0050	<0.0050	0.0056	<0.0050	<0.0050	<0.0050	<0.0050
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	0.05	0.80	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

SUMMARY OF LABORATORY ANALYTICAL RESULTS:
MONITORING WELL SMW-9

COMPOUNDS	MCL/ SMCL (1) (mg/L)	Dilution Factor Standard (mg/L) (4)	7/31/2008 SMW-9 (mg/L)	1/14/2009 SMW-9 (mg/L)	7/25/2009 SMW-9 (mg/L)	1/24/2010 SMW-9 (mg/L)	7/26/2010 SMW-9 (mg/L)	1/11/2011 SMW-9 (mg/L)	7/20/2011 SMW-9 (mg/L)	1/27/2012 SMW-9 (mg/L)	8/6/2012 SMW-9 (mg/L)	1/26/2013 SMW-9 (mg/L)	8/1/2013 SMW-9 (mg/L)	4/30/2014 SMW-9 (mg/L)	DUP 4/30/2014 SMW-9 (mg/L)	11/6/2014 SMW-9 (mg/L)	11/6/2014 SMW-9 (mg/L)	DUP 11/6/2014 SMW-9 (mg/L)	4/10/2015 SMW-9 (mg/L)	3/8/2016 SMW-9 (mg/L)	10/12/2016 SMW-9 (mg/L)	6/5/2017 SMW-9 (mg/L)
METALS																						
Arsenic	0.05	8.00	0.035	0.022	0.03	0.012	0.021	0.018	0.014	0.023	0.021	0.015	0.016	<0.010	0.043	0.012	<0.010	<0.010	0.013	<0.010	<0.010	<0.010
Barium	2.00	160.00	0.97	1.1	0.83	0.37	1.1	0.98	0.94	0.99	0.81	1	0.86	0.65	0.071	0.78	0.56	0.56	0.96	0.85	0.41	0.59
Chromium	0.10	14.992	<0.010	<0.010	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead	0.015	0.1488	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	0.05	0.80	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**SUMMARY OF LABORATORY ANALYTICAL RESULTS:
MONITORING WELL SMW-10**

COMPOUNDS	MCL/ SMCL (1) (µg/L)	Dilution Factor Standard (mg/L) (4)	7/25/2008 SMW-10 (mg/L)	1/14/2009 SMW-10 (mg/L)	7/25/2009 SMW-10 (mg/L)	1/24/2010 SMW-10 (mg/L)	7/25/2010 SMW-10 (mg/L)	1/11/2011 SMW-10 (mg/L)	7/19/2011 SMW-10 (mg/L)	1/24/2012 SMW-10 (mg/L)	8/6/2012 SMW-10 (mg/L)	1/26/2013 SMW-10 (mg/L)	8/7/2013 SMW-10 (mg/L)	4/30/2014 SMW-10 (mg/L)	11/5/2014 SMW-10 (mg/L)	4/2/2015 SMW-10 (mg/L)	3/3/2016 SMW-10 (mg/L)	10/4/2016 SMW-10 (mg/L)	6/5/2017 SMW-10 (mg/L)
METALS																			
Arsenic	0.05	8.00	0.037	0.029	0.035	0.034	0.043	0.029	0.034	0.04	0.078	0.043	0.033	0.035	0.038	0.031	0.039	0.033	0.047
Barium	2.00	160.00	0.13	0.16	0.15	0.13	0.11	0.14	0.15	0.14	0.088	0.13	0.15	0.18	0.17	0.19	0.18	0.16	0.12
Chromium	0.10	14.982	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.015	0.1488	0.0059	0.015	<0.0050	<0.0050	0.03	<0.0050	0.017	0.011	0.24	<0.005	0.035	0.023	0.018	0.011	0.096	<0.0050	0.10
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Selenium	0.05	0.80	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010

**SUMMARY OF LABORATORY ANALYTICAL RESULTS:
MONITORING WELL SMW-10**

COMPOUNDS	MCL/ SMCL (1) (µg/L)	Dilution Factor Standard (µg/L) (4)	7/25/2008 SMW-10 (µg/L)	1/14/2009 SMW-10 (µg/L)	7/25/2009 SMW-10 (µg/L)	1/24/2010 SMW-10 (µg/L)	7/25/2010 SMW-10 (µg/L)	1/11/2010 SMW-10 (µg/L)	7/19/2011 SMW-10 (µg/L)	1/24/2012 SMW-10 (µg/L)	8/6/2012 SMW-10 (µg/L)	1/26/2013 SMW-10 (µg/L)	8/7/2013 SMW-10 (µg/L)	4/30/2014 SMW-10 (µg/L)	11/5/2014 SMW-10 (µg/L)	4/2/2015 SMW-10 (µg/L)	3/3/2016 SMW-10 (µg/L)	10/4/2016 SMW-10 (µg/L)	6/5/2017 SMW-10 (µg/L)
VOLATILE COMPOUNDS																			
Chloromethane	NA (2)	1105/-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromomethane	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vinyl Chloride	1 (115) (3)	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Methylene Chloride	NA	889/-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<10
Acetone	NA	NA	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<10	<10	<20	<20
Carbon Disulfide	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethene	7	11.1/1120	4.8	5.8	6	5.5	5.6	5.4	5.9	4.6	1.6	4.2	6.3	5.7	7.1	4.1	4.4	5.7	5.2
1,1-Dichloroethane	NA	NA	19	21	18	18	16	14	14	12	6.7	13	13	13	13	8.6	8.1	10	9.1
1,2-Dichloroethene (total)	70	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0
Chloroform	100	1105/-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	200	496000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	5	49/480	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	100	53/-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	527/480	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	NA	66	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	1 (115) (3)	189	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

**SUMMARY OF LABORATORY ANALYTICAL RESULTS
MONITORING WELL SMW-17**

COMPOUNDS	MCL/ SMCL (1) (µg/L)	Dilution Factor Standard (µg/L) (4)	7/29/2008 SMW-17 (µg/L)	1/12/2009 SMW-17 (µg/L)	7/26/2009 SMW-17 (µg/L)	7/28/2010 SMW-17 (µg/L)	1/11/2011 SMW-17 (µg/L)	7/21/2011 SMW-17 (µg/L)	1/25/2012 SMW-17 (µg/L)	7/31/2012 SMW-17 (µg/L)	1/27/2013 SMW-17 (µg/L)	7/23/2013 SMW-17 (µg/L)	5/1/2014 SMW-17 (µg/L)	11/3/2014 SMW-17 (µg/L)	4/8/2015 SMW-17 (µg/L)	3/12/2016 SMW-17 (µg/L)	DUP 3/12/2016 SMW-17 (µg/L)	10/10/2016 SMW-17 (µg/L)	7/20/17 SMW- 17 (µg/L)
VOLATILE COMPOUNDS																			
Chloromethane	NA (2)	1105/ --	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<4.0	<4.0	<1.0	<1.0	<1.0	<4.0	<4.0
Bromomethane	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	1 (115) (3)	NA	<1.0	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroethane	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene Chloride	NA	889/ --	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<10
Acetone	NA	NA	<25	<25	<25	<25	<25	<25	<25	28	<25	<25	<20	<20	15	16	22	<20	32
Carbon Disulfide	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NS	NS	NS	NS	NS	NS	NS
1,1-Dichloroethene	7	11.1/1120	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1-Dichloroethane	NA	NA	<1.0	5.4	<1.0	5.5	4	<1.0	3.3	<1.0	3.2	<1.0	<1.0	2.9	1.7	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethene (total)	70	NA	<1.0	<1.0	13	28	19	1	17	<1.0	16.0	4.3	<2.0	19	11.0	4.5	3.4	5.9	<2.0
Chloroform	100	1105/ --	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloroethane	5	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-Butanone	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	200	496000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Carbon Tetrachloride	5	49480	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromodichloromethane	100	53/ --	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,2-Dichloropropane	5	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	NA	NA	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene	5	527/480	<1.0	2.4	<1.0	2.5	1.8	1.8	1.3	<1.0	1.4	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane	NA	66	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	5	NA	<1.0	<1.0	<1.0	1.7	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzene	1 (115) (3)	189	<1.0	<1.0	2.9	6.3	<1.0	<1.0	4.5	<1.0	3.4	<1.0	<1.0	3.2	1.9	<1.0	<1.0	<1.0	<1.0

**SUMMARY OF LABORATORY ANALYTICAL RESULTS:
MONITORING WELL SMW-18**

COMPOUNDS	MCL/ SMCL (1) (mg/L)	Dilution Factor Standard (mg/L) (4)	7/29/2008 SMW-18 (mg/L)	1/20/2009 SMW-18 (mg/L)	7/25/2009 SMW-18 (mg/L)	1/24/2010 SMW-18 (mg/L)	7/26/2010 SMW-18 (mg/L)	1/11/2011 SMW-18 (mg/L)	7/20/2011 SMW-18 (mg/L)	1/25/2012 SMW-18 (mg/L)	8/6/2012 SMW-18 (mg/L)	1/25/2013 SMW-18 (mg/L)	8/2/2013 SMW-18 (mg/L)	4/30/2014 SMW-18 (mg/L)	11/6/2014 SMW-18 (mg/L)	4/3/2015 SMW-18 (mg/L)	3/3/2016 SMW-18 (mg/L)	10/13/2016 SMW-18 (mg/L)	6/5/17 SMW-18 (µg/L)
METALS																			
Arsenic	0.05	8.00	0.27	0.26	0.26	0.30	0.16	0.24	0.26	0.30	0.25	0.24	0.23	0.20	0.19	0.19	0.20	0.12	0.16
Barium	2.00	160.00	0.51	0.54	0.56	0.66	0.57	0.48	0.54	0.56	0.61	0.58	0.58	0.54	0.63	0.58	0.79	0.57	0.59
Chromium	0.10	14.982	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.015	0.1488	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.015	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Selenium	0.05	0.80	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

**SUMMARY OF LABORATORY ANALYTICAL RESULT:
MONITORING WELL SMW-21**

COMPOUNDS	MCL/ SMCL (1) (mg/L)	Dilution Factor Standard (mg/L) (4)	Date																		
			7/25/2008 SMW-21 (mg/L)	1/20/2009 SMW-21 (mg/L)	7/25/2009 SMW-21 (mg/L)	1/24/2010 SMW-21 (mg/L)	7/25/2010 SMW-21 (mg/L)	1/25/2011 SMW-21 (mg/L)	7/19/2011 SMW-21 (mg/L)	1/25/2012 SMW-21 (mg/L)	8/6/2012 SMW-21 (mg/L)	1/26/2013 SMW-21 (mg/L)	8/7/2013 SMW-21 (mg/L)	4/29/2014 SMW-21 (mg/L)	11/5/2014 SMW-21 (mg/L)	4/3/2015 SMW-21 (mg/L)	3/3/2016 SMW-21 (mg/L)	10/5/2016 SMW-21 (mg/L)	6/5/2017 SMW-21 (µg/L)		
METALS																					
Arsenic	0.05	8.00	0.15	0.13	0.14	0.15	0.13	0.12	0.11	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.11	0.11		
Barium	2.00	160.00	0.42	0.5	0.46	0.39	0.43	0.43	0.42	0.37	0.41	0.37	0.38	0.44	0.40	0.37	0.39	0.35	0.35		
Chromium	0.10	14.992	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010		
Lead	0.015	0.1488	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0066	<0.005	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020		
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040		
Selenium	0.05	0.80	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		

**SUMMARY OF LABORATORY ANALYTICAL RESULT:
MONITORING WELL SMW-22**

COMPOUNDS	MCL/ SMCL (1) (mg/L)	Dilution Factor Standard (mg/L) (4)	1/12/2008 SMW-22 (mg/L)	7/27/2008 SMW-22 (mg/L)	1/20/2009 SMW-22 (mg/L)	7/28/2009 SMW-22 (mg/L)	1/20/2010 SMW-22 (mg/L)	7/26/2010 SMW-22 (mg/L)	1/11/2011 SMW-22 (mg/L)	1/11/2011 DUP SMW-22 (mg/L)	7/25/2011 SMW-22 (mg/L)	1/27/2012 SMW-22 (mg/L)	8/7/2012 SMW-22 (mg/L)	1/29/2013 SMW-22 (mg/L)	1/29/2013 DUP SMW-22 (mg/L)	5/7/2014 SMW-22 (mg/L)	11/4/2014 SMW-22 (mg/L)	4/10/2015 SMW-22 (mg/L)	3/12/2016 SMW-22 (mg/L)	10/12/2016 SMW-22 (mg/L)	6/8/2017 SMW-22 (mg/L)	DUP 6/8/2017 SMW-22 (mg/L)
METALS																						
Arsenic	0.05	8.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010
Barium	2.00	160.00	0.1	0.1	0.12	0.17	0.14	0.12	0.096	0.11	0.11	0.11	0.085	0.094	0.081	0.10	0.11	0.11	0.13	0.097	0.092	0.097
Chromium	0.10	14.992	0.029	<0.01	<0.01	0.0058	0.0067	<0.005	<0.010	<0.010	0.023	0.086	0.085	<0.010	<0.010	0.060	0.015	<0.010	0.041	<0.010	<0.010	<0.010
Lead	0.015	0.1488	<0.005	<0.005	<0.005	0.0058	0.0067	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	<0.0050
Mercury	0.002	0.00192	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00020	<0.00020	<0.00020
Nickel	0.10	11.12	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.040	<0.040	<0.040
Selenium	0.05	0.80	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	<0.010	<0.010

Source: 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. October 2017.

Table H-2: Summary of 2020 Laboratory Analytical Results for SMW-18 and SMW-21

Workorder: J2002509 Pickettville Rd LF

Lab ID: J2002509001

Date Received: 02/20/20 16:56 Matrix: Water

Sample ID: SMW-18

Date Collected: 02/20/20 15:56

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: E200.7 Analysis,Waters			Preparation Method: EPA 200.7					
			Analytical Method: EPA 200.7					
Arsenic	0.17		mg/L	1	0.040	0.0090	2/25/2020 12:12	J

Lab ID: J2002509002

Date Received: 02/20/20 16:56 Matrix: Water

Sample ID: SMW-21

Date Collected: 02/20/20 14:11

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: E200.7 Analysis,Waters			Preparation Method: EPA 200.7					
			Analytical Method: EPA 200.7					
Arsenic	0.10		mg/L	1	0.040	0.0090	2/25/2020 12:23	J

Source: March 2020 Data Submittal. Pickettville Road Landfill Site. Prepared by Golder Associates, Inc. March 2020.

Table H-3: Landfill Gas Data 2015 - 2017

GAS PROBE SURVEY SUMMARY FORM

SITE DESCRIPTION:

Site Name: Picketville Landfill
 Project Number: 993-2623-6.0402
 Location: Jacksonville, FL

Date Performed: 3/30/15
 Time On-Site: 1000
 Time Off-Site: _____

Summary Table

Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments	Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments
GP-1	0	0		GP-24	0	760	
GP-2	0	0		GP-25	0	0	
GP-3	0	0		GP-26	X	X	abandoned
GP-4	0	0		GP-27	0	0	
GP-5	0	0		GP-28	0	760	
GP-6	0	760		GP-29	X	X	abandoned
GP-7	0	0		GP-30	0	17	
GP-8	0	0		GP-31	0	41	
GP-9	0	0		GP-32	X	X	abandoned
GP-10	0	0		GP-33	0	0	
GP-11	0	0		GP-34	0	4	
GP-12	0	0		GP-35	0	0	Does not exist
GP-13	0	0		GP-36	0	0	
GP-14	0	0		GP-37	0	0	
GP-15	0	0		GP-38	0	0	
GP-16	0	0		GP-39	0	760	
GP-17	-	-	Does not exist	GP-40	0	760	
GP-18	0	0		GP-41	0	760	
GP-19	-	-	Does not exist	GP-42	0	760	
GP-20	-	-	Does not exist	GP-43	0	760	
GP-21	-	-	Does not exist	GP-44	X	X	Does not exist
GP-22	0	9.1		GP-45	X	X	Does not exist
GP-23	X	X	abandoned	GP-46	X	X	Does not exist

Instrument Calibration:

Make: Landtec
 Model: Gen 2000
 Serial Number: _____

Calibration Gas (%LEL): 50%
 Pre-Survey Reading: 51.4%
 Post-Survey Reading: 52.6%

GAS PROBE SURVEY SUMMARY FORM

SITE DESCRIPTION:

Site Name: Picketville Landfill
 Project Number: 993-2623-Y17.0402
 Location: Jacksonville, FL

Date Performed: 2/25/16
 Time On-Site: 0900
 Time Off-Site: 1230

Summary Table

Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments	Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments
GP-1	0	0		GP-24	0	12	
GP-2	0	0		GP-25	0	0	
GP-3	0	0		GP-26	X	X	abandoned
GP-4	0	0		GP-27	0	0	
GP-5	0	0		GP-28	0.03	7100	
GP-6	0.75	7100		GP-29	X	X	abandoned
GP-7	0	33		GP-30	0.03	0	
GP-8	0	0		GP-31	0.1	7100	
GP-9	0	0		GP-32	X	X	abandoned
GP-10	0.04	47		GP-33	0	0	
GP-11	0	0		GP-34	0	0	
GP-12	0.04	7100		GP-35	0	0	NA
GP-13	0	0		GP-36	0	0	
GP-14	0	0		GP-37	0	0	
GP-15	0.02	7100		GP-38	0	0	
GP-16	0	0		GP-39	0	0	
GP-17	-	-	Does not exist	GP-40	0	0	
GP-18	0.01	22		GP-41	0	0	
GP-19	-	-	NA	GP-42	0.03	7100	
GP-20	-	-	NA	GP-43	0.03	7100	
GP-21	-	-	Does not exist	GP-44	X	X	Does not exist
GP-22	0	0		GP-45	X	X	Does not exist
GP-23	X	X	abandoned	GP-46	X	X	Does not exist

Instrument Calibration:

Make: ES Landtec
 Model: GA-70
 Serial Number: AG-B-1000-N510

Calibration Gas (%LEL): 50
 Pre-Survey Reading: 49
 Post-Survey Reading: 49

GAS PROBE SURVEY SUMMARY FORM

SITE DESCRIPTION:

Site Name: Picketville Landfill
 Project Number: 993-2623-Y17.0402
 Location: Jacksonville, FL

Date Performed: 10/21/16
 Time On-Site: 0920
 Time Off-Site: 1249

Summary Table

Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments	Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments
GP-1	0	0		GP-24	0	0	
GP-2	0	0		GP-25	0	0	
GP-3	0	0		GP-26	X	X	abandoned
GP-4	0	0		GP-27	0	0	
GP-5	0	0		GP-28	0	62%	
GP-6	0	0.4%		GP-29	X	X	abandoned
GP-7	0	0		GP-30	0	0.1%	
GP-8	0	0		GP-31	0	12.4%	
GP-9	0	1.7%		GP-32	X	X	abandoned
GP-10	0	0		GP-33	0	0	
GP-11	0	0		GP-34	0	0	
GP-12	0	0		GP-35			DNE
GP-13	0	0		GP-36	0	0	
GP-14	0	0		GP-37	0	0	
GP-15	0	0.04%		GP-38	0	0	
GP-16	0	0		GP-39	0	0	
GP-17			DNE	GP-40	0	12.7%	Missing Port
GP-18	0	0		GP-41	0	0	
GP-19			DNE	GP-42	0	0	
GP-20			DNE	GP-43	0	0	
GP-21			DNE	GP-44	X	X	Does not exist
GP-22	0	0		GP-45	X	X	Does not exist
GP-23	X	X	abandoned	GP-46	X	X	Does not exist

Instrument Calibration:

Make: Lanthe
 Model: GA 90
 Serial Number: 1499

Calibration Gas (%LEL): CH₄ 2.5%
 Pre-Survey Reading: 2.4%
 Post-Survey Reading: 2.5%

GAS PROBE SURVEY SUMMARY FORM

SITE DESCRIPTION:

Site Name: Picketville Landfill
 Project Number: 993-2623-Y20
 Location: Jacksonville, FL

Date Performed: 4/21/17
 Time On-Site: 1230
 Time Off-Site: 1708

Summary Table

Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments	Gas Probe ID	Pressure Measurement (in Hg)	Methane Gas Measurement (%LEL)	Comments
GP-1	0.00	0		GP-24	0.00	0	
GP-2	0.00	0		GP-25	0.00	0.1	
GP-3	0.00	0		GP-26	X	X	abandoned
GP-4	0.00	0		GP-27	0.00	0	
GP-5	0.00	0		GP-28	0.00	28.1	
GP-6	0.00	0.1		GP-29	X	X	abandoned
GP-7	0.00	0		GP-30	0.00	26.3	
GP-8	0.00	0.2		GP-31	0.00	27.1	
GP-9	0.00	56.8		GP-32	X	X	abandoned
GP-10	0.00	0		GP-33	0.00	0	
GP-11	0.00	0.1		GP-34	0.00	0.1	
GP-12	0.00	0.1		GP-35			Does not Exist
GP-13	0.00	0		GP-36	0.00	0	
GP-14	0.00	0		GP-37	0.00	0	
GP-15	0.00	29.7		GP-38	0.00	0	Broken hinge
GP-16	0.00	0		GP-39	0.00	0	
GP-17			Does not Exist	GP-40	0.00	0.5	
GP-18	0.00	0		GP-41	0.00	0	
GP-19			Does not Exist	GP-42	0.00	0	
GP-20			" "	GP-43	0.00	0	
GP-21			" "	GP-44	X	X	Does not exist
GP-22	0.00	0		GP-45	X	X	Does not exist
GP-23	X	X	abandoned	GP-46	X	X	Does not exist

Instrument Calibration:

Make: Lanthe
 Model: GA 90
 Serial Number: 1499

Calibration Gas (%LEL): 5.0%
 Pre-Survey Reading: 4.9%
 Post-Survey Reading: 4.9%

Sources: Field notes obtained from the 2015, 2016 and 2017 Annual Groundwater Monitoring Reports.

APPENDIX I – SCREENING-LEVEL RISK REVIEW

Since the ROD and ESD were issued, the EPA’s standardized risk assessment methodology has been revised to require a vapor intrusion pathway evaluation using multiple lines of evidence for Sites where VOCs are detected in the subsurface. Currently, no buildings are present on the Site and institutional controls are in place that prohibit construction of buildings on the Site. However, a home is located along the western Site boundary, albeit upgradient of the Site. To be conservative, due to the close proximity of the residence to the Site, this FYR conducted a screening-level vapor intrusion evaluation using the EPA’s Vapor Intrusion Screening Level (VISL) calculator to determine if the volatile contaminants detected in Site groundwater require further evaluation.

The maximum concentrations of volatile COCs detected in the Upper Sand Aquifer in 2017 were used in the VISL calculator with default assumptions for residential exposure. As shown in Table I-1, the screening-level cumulative cancer risk is within the EPA’s risk management range of 1×10^{-6} to 1×10^{-4} and the hazard quotients (HQs) are below the EPA’s threshold of 1.0.

The screening-level evaluation of vapor intrusion assumes the maximum detection of each VOC is present across the Site, which is conservative because many wells were below detection for VOCs. This suggests that there is not a significant VOC source at the Site. These results support the finding that the vapor intrusion pathway does not currently pose significant risks. However, if long-term monitoring demonstrates any increases in concentrations, this pathway should be reevaluated using multiple lines of evidence.

Table I-1: Screening-Level Vapor Intrusion Risk Evaluation

VOC	Maximum Upper Sand Aquifer Well Concentration June 2017 (µg/L) ^a	VISL Calculator ^b	
		Residential	
		Cancer Risk	Noncancer HQ
Acetone	48 (SMW-18)	-	0.000002
Chlorobenzene	3.7 (SMW-18)	-	0.009
1,1-Dichloroethane	9.1 (SMW-10)	1×10^{-6}	-
1,1-DCE	5.2 (SMW-10)	-	0.03
Cumulative Totals		1×10^{-6}	0.03
<i>Notes:</i> a. Data obtained from Table 2 in the 2017 Semi-Annual and Final CD-Mandated Groundwater Monitoring Report, Pickettville Road Landfill Site. Table 2. Prepared by Golder Associates, Inc. October 2017. b. VISL calculator accessed at https://epa-visl.ornl.gov/cgi-bin/visl_search on 6/19/2020. - = toxicity value not established to calculate a cancer risk or noncancer HQ. HQ = hazard quotient µg/L = micrograms per liter			

APPENDIX J – INSTITUTIONAL CONTROL DOCUMENTS

Figure J-1: July 1993 Notice and Deed Restriction on Site Property⁵

01.7624 PG 1499

NOTICE AND DEED RESTRICTIONS

OFFICIAL RECORDS

JAX 51, INC., a Georgia corporation, as owner of certain real property (the "Property") on which all or a portion of the National Priorities List, 40 CFR Part 300, site known as the Pickettville Road Landfill Superfund Site (the "Site"), which real property, according to information provided the undersigned, contains hazardous substances (as defined by Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §9601(14)), is situated in Duval County, Jacksonville, Florida, and is more completely described as follows:

See Exhibit "A" attached hereto and by this reference made a part hereof.

hereby restricts the use of said Property as more fully set forth in this Notice and Deed Restrictions.

This document is executed pursuant to the requirements of Section V.G. of that certain Consent Decree between the United States of America and the City of Jacksonville, et. al., executed in connection with United States of America v. City of Jacksonville, et. al., Civil Action No. 92-133-Civ-J-16, and entered in the District Court for the Middle District of Florida, Jacksonville Division, on April 22, 1992 (which, including Appendices attached thereto, is referred to herein as the "Consent Decree"). The Consent Decree is attached hereto and recorded herewith to comply with the requirements of said Section V.G. All defined terms (indicated by initial capitalization) used in this Notice and Deed Restrictions and not otherwise defined herein,

Prepared By and Return to: A. Keith Daw, Esq.
Rogers, Towers, Bailey, Jones & Gay, P.A.
1301 Gulf Life Dr., Suite 1500
Jacksonville, FL 32207

⁵ The deed restriction included a copy of the 226-page 1992 Consent Decree, which is not included herein.

OFFICIAL RECORDS

shall have the same meaning and definition as such terms are given in the Consent Decree.

The restrictions created hereby are imposed upon the Property for the purposes of preventing any use of the Property which would (a) interfere with the performance of the Remedial Design and Remedial Action at the Site, or with long term Operation and Maintenance of the remedy at the Site, as required in the Consent Decree, or (b) interfere with the integrity or effectiveness of the Remedial Action implemented at the Site.

The restrictions imposed pursuant to this Notice and Deed Restrictions are as follows:

1. Use of the Property in any manner which would interfere with, obstruct, delay or disturb the performance of the Site Remedial Design, Remedial Action, and or Operation and Maintenance activities, as described in the Consent Decree is prohibited;
2. Use of the Property in any manner that would interfere with or disturb the effectiveness or integrity of the Site Remedial Action constructed or installed pursuant to the Consent Decree, including, but not limited to, the final landfill cover installed on the Site and the installation and operation of any Site monitoring systems at the Property, is prohibited;
3. Extraction of ground water from the Property for consumptive or other uses, except as required in the Consent Decree, is prohibited;
4. There shall be no residential, commercial, industrial, recreational use of the Property, including, but not limited to, the construction, installation or use of any structures or buildings for such purposes, except as may be required in the Consent Decree ;
5. There shall be no installation, construction, removal or use of any buildings, wells, pipes, roads, ditches or any other structures at the Property except as consistent with the Consent Decree (such consistency shall be deemed to exist upon approval of any such activity by the United States Environmental Protection Agency, Region IV) ; and

6. Use of the Site in a manner that would impair the continued presence of humans at the Site, other than presence necessary for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance required under the Consent Decree, or any additional response action deemed necessary by the United States Environmental Protection Agency, Region IV, is prohibited.

All of the above restrictions shall run with the land and be binding upon the owners of the Property and their respective successors, assigns and transferees. The restrictions shall continue in perpetuity.

If any provision of this Notice and Deed Restrictions is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of any other provisions thereof. All such other provisions shall continue unimpaired in full force and effect.

If any provision of this Notice and Deed Restrictions is also the subject of differing provisions of any law or regulation established by any federal, state or local government, the stricter of the standards established by the two provisions shall prevail.

No provision of this Notice and Deed Restrictions shall be construed as causing a violation of any applicable zoning laws, regulations or ordinances. If any such conflict does arise, the applicable zoning laws, regulations or ordinances shall prevail, unless they are inconsistent with CERCLA in which case the provision of this Notice and Deed Restrictions shall prevail.

OFFICIAL RECORDS

IN WITNESS WHEREOF, JAX 51, INC., as owner of the Pickettville Road Landfill Site, or a portion thereof, have caused these Deed Restrictions to be executed this 22nd day of July, 1993.

SIGNED, SEALED AND DELIVERED
IN THE PRESENCE OF:

David E. Hudson
Name: DAVID E. HUDSON

W. Hale Barrett
Name: W. Hale Barrett

JAX 51, INC., a Georgia Corporation

By: Henry H. Claussen
Print Name of Officer: HHC Claussen
Its: President
Address: PO Box 2-1102-4
Augusta GA 30617-1024

STATE OF GEORGIA

COUNTY OF RICHMOND

The foregoing instrument was acknowledged before me this 22nd day of July, 1993, by Henry H. Claussen, the President of JAX 51, INC., a Georgia corporation, on behalf of the corporation. He (check one) ☒ is personally known to me or ☐ who has produced _____ as identification and who did not take an oath.

Nancy H. Berry
Notary Public, State of Florida Georgia
Name: Nancy H. Berry
My Commission Expires: 10-24-94
My Commission Number is: 10167

Exhibit "A"
LEGAL DESCRIPTION

7017624 PG1503

(As Recorded In Official Records Volume 5614, Page 1049, Public Records of Duval County, Florida)

OFFICIAL RECORDS

A part of the Seymour Pickett Donation, Section 38, and part of the William Lane Grant, Section 45, all in Township 1 South, Range 26 East, Duval County, Florida, and more particularly described as follows:

Commencing at the intersection of the curved Northwestern right-of-way line of Edgewood Avenue (a 100 foot right-of-way as now established), said curved Northwestern right-of-way line being concave to the Southeast; with the Southwesterly right-of-way line of Pickettville Road (an 80 foot right-of-way as now established); run thence North 41° 55' West along the Southwesterly right-of-way line of Pickettville Road, 233.5 feet to a Point of Beginning; thence South 11° 16' 14" West, 621.77 feet to a point; thence South 20° 32' East, 300 feet to a point; thence South 69° 28' West, 415 feet to a point; thence South 20° 32' East, 420 feet to a point; thence South 69° 28' West, 251 feet to a point; thence South 20° 32' East, 213.8 feet to a point in the Northerly line of Biltmore Subdivision, Unit 6 according to plat thereof recorded in Plat Book 14, Page 29, of the Current Public Records of Duval County, Florida; thence South 69° 28' West along said Northerly line of said Subdivision, 351.68 feet to a point; thence South 69° 29' West, 107.2 feet to a point, which point is in the Westerly line of the William Lane Grant and is the Northeasterly line of the Seymour Pickett Donation; thence North 31° 50' West along said line 1160.5 feet to a point; thence South 52° 41' West, 800 feet to a point; thence North 30° 39' West, 553.7 feet to a point in the Southerly line of Pickettville Road; thence North 62° 11' East, 600 feet to a point; thence South 31° 50' East, 10 feet to a point; thence North 66° 34' East along the Southerly line of the said Pickettville Road, 1200.6 feet to a point; thence North 59° 46' East, 256.25 feet to a point in said Southerly line of Pickettville Road to a point in the curved Southerly right-of-way line of Pickettville Road, said curved right-of-way line being concave to the South and having a radius of 247.93 feet; thence around and along said curved Southerly right-of-way line South 80° 29' East, 312.15 feet (chord bearing and distance) to the Point of Tangency thereof; thence South 41° 55' East, 169.2 feet to a Point of Beginning; EXCEPT that certain piece, parcel or tract of land situate, lying and being a part of the William Lane Grant, Section 45, Township 1 South, Range 26 East, Duval County, Florida, and being more particularly described as follows: COMMENCING at the intersection of the curved Northwestern right-of-way line of Edgewood Avenue (a 100 foot right-of-way as now established) said curved Northwestern right-of-way line being concave to the Southeast; with the Southwesterly right-of-way line of Pickettville Road (an 80 foot right-of-way as now established); run thence North 41° 55' 00" West along said Southwesterly right-of-way line of Pickettville Road, 233.5 feet to a Point of Beginning; thence South 11° 16' 14" West, 621.77 feet; thence South 82° 58' 35" West, 137.41 feet; thence North 11° 18' 25" West, 500.00 feet; thence North 76° 41' 35" East, 60.00 feet; thence North 11° 18' 25" West, 175.00 feet; thence North 28° 01' 15" East, 177.00 feet to a point in the curved Southerly right-of-way line of Pickettville Road, said curved Southerly right-of-way line being concave to the South and having a radius of 247.93 feet; thence around and along said curved Southerly right-of-way line South 60° 13' 45" East, 155.80 feet (chord bearing and distance) to the Point of Tangency thereof; thence continue along the Southwesterly right-of-way line of Pickettville Road, South 41° 55' East, 169.20 feet to the Point of Beginning.

Also being described as: (Surveyor's Description)

A part of the Seymour Pickett Donation in Section 38, Township 1 South, Range 26 East, and Part of Lots 2, 3, and 4 of the William Lane Grant, as per the Plat thereof in Plat Book 2, Page 14 of the Current Public Records of Duval County, Florida, being more particularly described as:

Commence at the intersection on the Westerly right-of-way line of Old Kings Highway with the Southerly right-of-way line of Pickettville Road (a 60 foot and 80 foot right-of-way as per the posting by the Board of County Commissioners of Duval County on February 1st, 1930 and the survey thereof by R.L. Croasdell on December 20th, 1929); run thence along said Southerly right-of-way line north 59° 28' 54" East, a distance of 605.47 feet to the Point of Beginning; thence continue along said right-of-way line North 59° 28' 54" East, a distance of 800.06 feet to the West line of the William Lane Grant as recorded in Plat Book 2, Page 14, of the Current Public Records of Duval County, Florida; thence South 32° 45' 05" East, along said West line 10.03 feet; thence North 59° 28' 54" East along said Southerly right-of-way line, a distance of 1457.29 feet to the point of curvature of a curve concave Southeasterly, having for its elements a central angle of 41° 19' 32" and a radius of 246.80 feet; thence run Northeasterly along the arc of said curve and Southerly right-of-way, a distance of 178.01 feet; thence departing said right-of-way line and curve run South 27° 39' 42" West, a distance of 177.00 feet; thence South 11° 55' 18" East, a distance of 175.00 feet; thence South 77° 57' 54" West, a distance of 60.00 feet; thence South 11° 45' 32" East, a distance of 500.00 feet; thence North 82° 55' 43" East, a distance of 135.70 feet to the West boundary of that parcel described in Official Records Volume 1074, Page 498, of the Current Public Records of Duval County, Florida; thence South 21° 13' 02" East, a distance of 298.52 feet; thence South 65° 36' 49" West, a distance of 415.00 feet; thence South 21° 20' 56" East, a distance of 420.00 feet to the Northerly right-of-way line of Keen Road as per Official Records Volume 1445, Page 446, said Public Records; thence South 65° 36' 39" West, along said right-of-way, 251.00 feet; thence South 21° 23' 11" East, a distance of 214.19 feet to the North line of Block 15, Biltmore No. 6, as recorded in Plat Book 14, Page 29, said Public Records; thence South 68° 33' 09" West, along said North line of Block 15, a distance of 458.88 feet to the West line of said William Lane Grant; thence North 32° 45' 05" West, along said West line, a distance of 1160.50 feet; thence South 50° 06' 43" West, a distance of 800.00 feet; thence North 33° 21' 02" West, a distance of 553.58 feet to the Point of Beginning.

Containing 50.22 acres, more or less.